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EDITED BY

EDWARD I. SEARS, LL. D.

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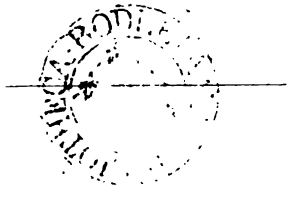

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DECEMBER, 1874.

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2. *Incidents of Travel in Central America, Chiapas, and Yucatan.* By JOHN L. STEPHENS. 2 vols., 8vo. New York: Harper & Brothers. 1841.

3. *Greece—Pictorial, Descriptive, and Historical.* By CHRISTOPHER WORDSWORTH, D. D. 8vo. London. 1853.

4. *Tour to the Sepulchres of Etruria in* 1839. By Mrs. HAMILTON GRAY. 1842.

5. *Memorials of Oxford.* By Rev. JAMES INGRAHAM, D. D., President of Trinity College. Illustrated. 2 vols., 8vo. Oxford. 1834.

ARCHITECTURE is at once the most historical and the most popular of the arts. It is historical, not only from the chronological indices it holds forth, but because it marks at every period the character, intellectual and political, of the nations to whom it belongs; and it is popular, for no other art more strongly appeals to the feelings, or is more instrumental in developing and cultivating the minds of the masses. The influence of painting and sculpture, its cognate arts, is

necessarily limited, not only by the degree of cultivation which their enjoyment presupposes, and without which they present but a blank to the mind of the observer, but by the comparatively restricted opportunities which they possess of exercising their influence even on the most cultivated. The picture or the statue is seen and studied; but where has it the means of producing the effect, more potent because more unconscious, which the most unlettered person experiences from his daily and hourly association with the architectural features of the city of his abode? The man, whose daily walk confronted him with edifices beautiful in material, elegant in design, graceful in outline, or grand and imposing in dimensions, was living in an atmosphere of beauty, and his mind insensibly adapted itself to its surroundings. The temple, on its elevated platform, enshrining the divinity of his heathen worship, or the heaven-pointing spire of the Christian church, imbued his mind with veneration; the triumphal arches and monuments awakened his pride and intensified his attachment to the place of his birth; the public halls in which the rulers of his country assembled, and the palaces in which they abode increased his sense of subordination and rendered him a better and more law-abiding citizen. Nay, more—the daily contemplation of objects of symmetry and beauty has in itself a refining and ennobling tendency upon the mind; and for that reason, if for no other, a nation which has produced good architects has made great progress in the formation of good citizens.

The architecture of a nation is, moreover, one of the truest indicators of its civilization and advancement. In the massive pyramids, monolithic temples, and structures imposing from their colossal proportions, which rise among the sands of Egypt, we recognize a formal and stationary nation, a despotic sovereignty and vast population, where labor was cheap and the life of the subject of little account; a civilization wonderful but low, where the mental culture bore no proportion to the material advancement; and a race devoid of progress, whose development was arrested at a compara-

tively early stage. In the graceful temples and porticos of Athens we discover the refinement of taste and intellect which continued to sway the world long after Greece had lost her freedom. In the amphitheatres, the aqueducts, the paved ways and palaces of Rome, we perceive the peculiar vastness of conception which rendered Rome, whether republic or empire, for so many ages the mistress of the world. In the Gothic temples of the Christian religion, with their long succession of pointed arches, gradually diminishing in the distance and creating shadows which enhance the apparent vastness of the whole, we trace the influence of the Northern worshipper, to whom the vistas formed by the interarching trees of his forest seemed the only suitable temple to the invisible Deity whom even in his heathen days he adored. The mediæval architecture of England and France tells of the feudal system where chief warred on chief and baron on baron; and the fortress-like palaces of some of the Italian cities speak more strongly than history itself of the days when those communities were torn by perpetual intestine conflict.

Although architecture in its general sense, as denoting the art of construction, had undoubtedly its origin in the earliest necessities of human life, yet, considered as a fine art, it cannot be said to exist until a nation has arrived at a degree of opulence and luxury sufficient to accustom it to consider not only the ordinary necessities of shelter from the elements and defence against outside enemies, but also to adopt fixed principles founded on æsthetic rules of proportion, suitability, and beauty. For these reasons, architecture, as an art, was usually one of the latest developed among the great nations of the earth, and has adopted various forms which render it in many respects the exponent of the origin, civilization, and social institutions of the various nations in which it has been developed.

The states of life into which mankind was originally distributed—those of hunters, shepherds, and tillers of the ground—may be said to have furnished the fundamental ideas of which modern architecture is the type. As the increase of nations

and the rise of wars and tumults necessitated the study of means of defence, a fourth element was added. The hunter, at first dwelling in the clefts of the rock, in time learned to hew out from its sides substantial and comfortable dwellings, such as are still found among the ruins of Idumea, where abode the descendants of a mighty hunter. The shepherd, wandering from spot to spot in search of pasture for his flocks and herds, invented the tent, for which the hides of his cattle furnished the material, and which could be transported with him in his nomadic life. The tent, as will hereafter be observed, is still, more or less, the architectural type of the Semitic races. The husbandman, requiring a permanent shelter for the fruits of the earth which he had gathered in, erected the timber hut, which has been, with great appearance of probability, said to constitute the type of Grecian architecture.

What was the earliest form in which the architecture of great cities was developed must be, to a great extent, matter of conjecture. That the most ancient ruins which exist at the present day are of the monolithic type—dwellings and temples hewn out of the solid rock, and monuments cut from a single mass of stone, such as the deserted habitations of Petra and the colossal remains found in Aboo Simbel—must be attributed to the indestructibility of that species of architecture. Yet the Pyramids of Egypt, and numerous ruins still found on the plains of Asia, indicate that brick was likewise a building material of great antiquity.

The structure of the pre-historic cities of Europe, although not strictly monolithic, approximates closely to that style of architecture, being composed of masses of stone of such dimensions as to have been styled by the ancients Cyclopean. These were fitted together in their original unhewn condition, in most cases not even lying in courses, but having the interstices filled in with smaller stones. Such were the walls of Mycenæ, mentioned by Homer as renowned for magnificence,* and of Tiryns, still more ancient, of which Strabo tells us,

* *Ευρναγυια Μυκηνη. Iliad*, iv., 52.
Πολυχρυσοιο Μυκηνηϛ. Odyssey, iii., 305.

"Prætus appears to have used Tiryns as a harbor, and to have had it walled by the Cyclops, who were seven in number and called Gastrocheirs (belly-handed), maintaining themselves by their art." *

Of the latter city the foundations of the Acropolis are still to be traced, while of the Acropolis of Mycenæ the Gate of the Lions mentioned by Pausanias still remains. The walls of Mycenæ are from twenty-one to twenty-five feet in thickness, while the lintel of the gate is a single stone fifteen feet long and over four feet thick. Still huger are the lintels of a building among these same ruins, by some supposed to be the tomb of Agamemnon, which is composed of two solid blocks of stone, each twenty-seven feet in length and over seventeen wide.†

A connecting link between pre-historic and historic times is found in the ancient cities of Egypt. We know that some of these cities were coeval with the days of Homer—notably Thebes, whose immense wealth is mentioned in the Odyssey, and instanced in the splendor of the gifts presented by its sovereigns to Menelaus and Helen.

> "In her soft hands the beauteous Phylo brought
> A silver canister, divinely wrought.
> To Sparta's queen of old the radiant vase
> Alcandra gave, a pledge of royal grace,
> For Polybus, her lord, whose sovereign sway
> The wealthy tribes of Pharian Thebes obey."
>
> *Odyssey*, Book iv., 125. ‡

Of the architecture of ancient Egypt the sole traces that remain are the temples and the tombs, unless we include the vast subterranean habitations which have induced many to infer that the Egyptians originally dwelt in excavations hollowed

* *Τερυνθὶ ὅρμητηριω χρησασθαι δοκει Προίτος και τειχέσαι δια κυκλωπων ους ἑπτα μεν ἑιναι, καλεισθαι δε Γαστεροχειρες, τρεφομενους εκ της τεχνής.*

† Gwilt, p. 18.

‡ *Φυλω δαργυρεον ταλαρον φερε τον οι ἐδωκεν*
Αλκανδρη, Πολυβοιο δαμαρ, ὁς εναι' ἐνι Θηβας
Αιγυπτιής, οθι πλεῖστα δομοις ἐνι κτηματα κειθαι.

out from the rock.* So numerous and vast are, however, the remains of these temples, that from them we can, in imagination, almost reconstruct the ancient cities; their principal streets lined with temples of immense extent, and constructed in a style imposing but monotonous; their porches of pyramidal shape often adorned with colossal figures cut from the solid rock; their square-built houses with terraced roofs and columns fashioned on the pattern of the lotos; and, extending beyond the walls, the pyramids which are supposed to be the final resting-places of their sovereigns. In their mode of construction these temples show a great advance over the rude masonry of the walls of Mycenæ and Tiryns. The stones of which they are erected evidence in their quarrying and working no inconsiderable degree of skill in the people by whom they were raised. Yet the preference for the monolithic style is everywhere perceptible. The colossal figures which adorned the entrance to the temple, the obelisks which stood in the doorways, even the columns which decorated the interior, were in most instances carved from the rock itself.†

Yet, however imposing in their dimensions, the grandeur of these edifices had little to do with proportion or æsthetic beauty. As in their human figures the limbs were dwarfed by the immense head and body, so in their structures many of the columns, however massive, seemed crushed by the superincumbent entablature. Still, with all their defects, in an æsthetic point of view, the temples of ancient Egypt must have produced an effect imposing beyond any more modern structure. The open court (*δρομος*), with its double avenue of sphinxes; the colossal vestibule (*προπυλαιον*); the gateway flanked by pyramidal towers; the vast quadrangle encompassed with lofty columns decorated with hieroglyphics and crowned with capitals designed from the lotos, the palm-leaf, or perhaps the bell-shaped vase which forms the germ of the Corinthian capital; the walls, decorated in bas-relief, or emblazoned with designs in the most brilliant colors, may

* Gwilt, p. 31. † *Ib.*, p. 39.

have well filled even the cultivated Greek traveller with astonishment and admiration.

The analogies which exist between the architecture of ancient Egypt and the pre-historic cities of Central America—cities so ancient that forests grow on their ruins, and erected by nations whose existence had passed away before European foot trod American shores—will be found on investigation to be much more superficial than is generally supposed, and to indicate little more than the similarity of ideas which would naturally suggest themselves to all early workers in stone. The temples, it is true, are quadrangular, which appears to have been the primitive plan in all nations who were accustomed to construct their buildings of stone, and is a plan which convenience and utility would naturally suggest. The altars and many, in fact most, of the idols are monolithic—which in itself only indicates the primitive character of the architecture—and are covered with what travellers, for want of a better term, have styled hieroglyphics, but which are, in reality, little more than sculptured representations of objects animate and inanimate (not unfrequently portions of the human body), and evidently carved on the stone surface for purposes of ornament, and not having any connection with writing, or probably much emblematic significance.* It is true that many of the structures in Central America are, like those of Egypt, pyramidal; but this is a mere peculiarity of external shape, which would naturally suggest itself to the primitive builder as the most effectual mode of securing solidity and permanency in the edifice.† The structures in Central America are, moreover, rather truncated cones than pyramids—their bases are generally round—their summits terraces of raised platforms—their material solid earth walled with stone.‡ The object of these American cones is, moreover, entirely different from that of the Egyptian pyramids. In almost every instance they

* This will be evident on inspecting Catherwood's *Pictures of the Sculptured Idols* in Stephens' *Central America*, vol. i., pp. 138–159.

† Stephens, vol. ii., p. 439. ‡ *Ib.*

sustain the ruins of a temple or other building.* In all essential features, by which these pre-historic American structures are characterised, the difference of their architecture is manifest. The ancient Egyptian temples were excavations from the rock, and the structures erected by them on the earth's surface were constructed on the same model. The ancient American buildings are invariably raised on artificial elevations, and, what is particularly remarkable, are entirely without columns.†

This peculiarity is the more striking when we remember that the writers who have made the history of architecture a study invariably assume the idea of the column to be derived from the trunk of a tree, or the log post which sustained the wooden hut. Now, Egypt is a comparatively treeless region —wood seems rarely to have entered into the composition of its buildings. Yet, in Egyptian architecture, no feature is more conspicuous than the mighty columns which line every temple, and are, in some cases, its only remains; although the tree had so little to do with furnishing the model, that the shaft in most instances represents a bundle of reeds or lotos-stems tied together.‡ In Guatemala, on the other hand, whose ruins stand in the heart of primeval forests, and must at all times have been in the midst of a wooded country, not a single column has been found.§

The office of columns may possibly have been fulfilled by the gigantic idols, as they are commonly called, which flanked the sides of the quadrangular platform or terrace. These so-called idols are usually oblong blocks of stone, generally monolithic, and varying from thirteen to twenty feet in height; in front, carved in alto-relievo, was a human figure, or in some instances only the head and arms—the lower part of the block, and also the back and sides were covered with sculptured designs which have been improperly styled hieroglyphics. The character of the faces was extremely varied. It will be seen from inspecting the engravings made from Catherwood's draw-

* Stephens, vol. ii., p. 440.
† *Ib.*, p. 441.
‡ Gwilt, p. 87.
§ Stephens, vol. ii., p. 441.

ings and published in Stephens' work* that the features in some of them are of a purely Caucasian, in fact almost Grecian, type;† others present the long eye, flat face, and high cheek-bone of the Mongol,‡ while a few are characterised by the unmistakable features of the North American Indian.§

Whoever were the architects of these remarkable cities, their effect must have been singularly picturesque and beautiful. Rising on artificial terraces above the surrounding country, their lofty pyramidal gateways, their vast quadrangular temples, over the walls of which towered the heads of their colossal idols at that time not only richly sculptured but painted in the brightest colors,‖ their ranges of steps with pyramidal elevations in like manner brilliantly painted,¶ their large square palaces raised also on elevations with stuccoed fronts adorned with paintings and bas-reliefs,** the whole necessarily conspicuous from its elevation throughout the neighboring region, they must, notwithstanding their comparatively barbarous architecture, have presented an effect with which that of few modern cities can be compared.

The extraordinary conquests of the Saracens under Omar the Second, in the seventh century, established them in the occupation of most of the hitherto Christian cities in the Eastern empire, and thence originated the arabesque or moresque style of architecture, of which the Alhambra is the most distinguished specimen.†† At first they do not appear to have possessed an extensive knowledge of architecture; for on the mosques which they at first constructed they are

* Stephens' *Central America*, vol. i., pp. 132–159.

† *Ib.*, pp. 138–150. ‡ *Ib.*, pp. 156–159 and frontispiece.

§ The engraving in vol. i. of Stephens' work, facing p. 158, represents an idol whose face is distinctly of the American Indian type, while in the region of his belt is carved a small face with Grecian features and of remarkable beauty.

‖ Stephens, vol. i., p. 137. ¶ *Ib.*, vol. i., p. 139.

** *Ib.*, vol. ii., pp. 309–320.

†† The first mesque erected beyond the limits of Arabia is said to be that constructed by the Caliph Omar II., on the site of the Temple of Jerusalem.—Gwilt, p. 50.

said to have employed Christian architects, imported for the purpose from Constantinople.* As their knowledge of the art increased, they appear to have been principally influenced by the models with which they were familiar, adapting in their palaces the Byzantine style, which they found in the conquered cities, to the ground-plan to which they had been accustomed in the East. The vast, open courts, the marble fountains, the latticed corridors, and pavilion-like towers which characterised the Oriental palaces were retained; but around these courts arose solid walls, supported on arches carried from column to column, as in the basilica; enclosing them were peristyles or colonnades, not unfrequently taken from Grecian or Roman ruins, which sustained broad galleries; and Byzantine domes surmounted their mosques and towers. The principal deviation from the Byzantine type was in the form of the arch, which in their doorways springs directly from the ground in the shape of a horse-shoe,† and in the galleries and arcades is often of the trefoil or quatrefoil pattern; while the only real novelty introduced into their structures was the minaret, which first appeared on the mosque erected by Alwali II. at Damascus, and which became almost universal on their places of worship.‡ But, while the Saracenic buildings retained externally the heavy gloom of the Byzantine style, the interior was characterised by the utmost lightness and elegance.§ In the light relievos, and the rich and fanciful designs which cover the walls of their palaces, it would seem as if their artists had transferred to the works on which they were engaged the profusion of ornament

* Parker, p. 32.

† This is the style of the great gateway of the Alhambra.

‡ Gwilt.

§ When one looks upon the fairy tracery of the peristyle, and the apparently fragile fretwork of the walls, it is difficult to believe that so much has survived the wear and tear of centuries, the shocks of earthquakes, the violence of war, and the quiet though no less baneful pilferings of the tasteful traveller; it is almost sufficient to excuse the popular tradition that the whole is protected by a magic charm.—*The Alhambra*, by Washington Irving, ch. 2.

visible in the stuffs and especially the carpets of India. These elaborate and beautiful patterns were, of course, too intricate to be usually carved in stone, but the effect was produced by covering the walls with plates of stucco; these were divided into sections by lines crossing at right angles, over which were drawn innumerable intersecting segments of circles. In the disposition and coloring of these an endless variety of patterns was obtained; the plates themselves, being also of divers shapes, produced interminable combinations by the mere variety of their adjustment,* the whole resulting in the beautiful varieties of patterns known as arabesque. In the pavements and the lower walls glazed or porcelain tiles were usually substituted for plates of stucco-work, producing the same effect from their variety of coloring and combination. These tiles, called *az-zulij* by the Arabs, and *azulejos* by the Spaniards, were introduced into the Netherlands when they came under Spanish dominion, and thence were derived the Dutch tiles which form so prominent a feature in Belgian architecture. It is a question how far these arabesque tiles may not have suggested the tesselated marble pavements of the Roman palaces and cathedrals.†

The vaulted roofs of the Saracenic palaces were wrought like honeycombs or frostwork, with pendant stalactites in brilliant but harmonious colors; and the star-shaped openings by which light was introduced produced an effect like enchantment. In all this architecture we recognize the same luxuriant imagination which characterises the Oriental poetry; the mementoes of "a brave, intelligent, and graceful people, who conquered, flourished, and passed away."‡

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* Urquhart's *Pillars of Hercules*, Book iii., ch. 8.

† That tesselated pavements were of great antiquity is evident from the description of the palace of Shushan, in which the couches stood on pavements of red, and blue, and black and white marble.—Esther i., 6.

‡ Irving's *Alhambra*, ch. 5.

The deserted halls and empty courts of the Alhambra and other Moorish ruins in Spain recall the sad commentary of Volney on visiting a similar scene:

"En ces murs ou règne un morne silence, retentissait sans cesse le

The architecture of the ancient cities in Southern Asia, though differing in points of detail from that of Egypt, yet bore to it sufficient resemblance to indicate the same original type, namely, the monolith or structure excavated from the rock. * But, when we come to the Semitic nations, the type is entirely changed. In viewing their cities we recognize the work of descendants of Nomadic tribes, whose ideas of architecture were developed from one primitive type—the tent. From this model is derived the principle of construction of their dwellings, in which the roofs rest on timber framing, and are as altogether unconnected with the walls "as though they had surrounded tents with enclosures of masonry." † In their concave, sloping sides, and still more concave roofs, we see once more the idea of the leather or canvas covering of the tent. For these reasons a Chinese or Tartar City may be compared to a vast camp. The lightness of the material, the concave roof blazing with all the colors of the rainbow, the porticoes diapered with variegated tints, the walls decorated with grotesque designs, and the columns and beams displayed like the

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bruit des arts, et les cris d'allégresse et de fête: ces marbres amoncelés formaient des palais reguliers: ces colonnes abattues ornaient la majesté des temples: ces galeries écroulées dessinaient les places publiques. Là, pour les devoirs respectables de son culte, pour les soins touchants de sa subsistance, affluait un peuple nombreux: là, une industrie créatrice de jonissances appelait les richesses de tous les climats, et l'on voyait s'échanger la pourpre de Tyr pour le fil précieux de la Serique; le tissu moelleux de Kachemire pour les tapis fastueux de la Lydie; l'ambre de la Baltique pour les perles et les parfums Arabes; l'or de l'Ophir pour l'étain de Thulé.

"Et maintenant voilà ce qui subsiste de cette Ville puissante, un lugubre squelette! voilà ce qui reste d'une vaste domination, un souvenir obscur et vain! Au concours bruyant qui se pressait sous ces portiques, a succédé une solitude de mort. Le silence du tombeau s'est substitué au murmure des places publiques. L'opulence d'une cité de commerce s'est changée en une pauvreté hideuse. Les palais des rois sont devenus le repaire des fauves; les troupeaux parquent au seuil des temples; et les reptiles immondes habitent les sanctuaires des dieux."—Volney, *Les Ruines*, ch. ii.

* Gwilt, pp. 19-29. † *Ib.*, p. 43.

bars of a light cage, all give to the houses the effect of pavilions. Even the palaces, which are of vast extent * and of corresponding magnificence, cannot be said to have varied essentially in design from the primitive model. The courts of the palace at Pekin are intersected by canals spanned by marble bridges; the walls are raised on marble platforms, and the gateway adorned with marble columns decorated with dragons; the courts contain sculptured lions seven or eight feet in height; yet the roof rests on wooden columns, and only four feet in height of the encompassing wall is of brick—the upper portion being wholly of bamboo covered with transparent paper.†

The various styles hitherto commemorated, though worthy of note in connection with the history of architecture, have had little bearing on its development as a fine art. It is in the third class, although its origin be equally rude, that we find the germ of that architecture which is recognized as the type of artistic perfection. The Gothic temple, with its pointed archways, its long-drawn aisles, and its spires pointing heavenward, may stand unrivalled for sublimity; Rome, with its vast domes and triumphal arches, may exceed all cities in grandeur; but when beauty, perfect and unalloyed, is mentioned, the mind of the artist instinctively reverts to Athens. It may be that the log sides of the hut suggested the column, the beam and sloping rafters the pediment, and the rough ends of the joists the triglyph, while the frieze and the metopæ were mere open spaces, not until a later period closed in for protection against the weather.‡ These rude beginnings gave rise to the noblest

* The palace at Pekin occupies an area of 3,600 feet by 3,000, exclusive of outer courts.—Gwilt, p. 45.

† Cousin, *De Génie de l'Architecture*, p. 26.

‡ In the Iphigenia in Tauris, Pylades advises Orestes to introduce himself into the temple by means of one of the metopæ.

Ορα δε γ'ειδω τριγλυφων οποι κενον
Δεμας καθειναι. *Ιφιγενεια εν Ταυρις*, 113.

Tr.—See the *empty space* between the triglyphs, where the body can enter.

style of architecture that the mind of man has conceived, and for whose adornment was invented a class of sculpture which still remains unsurpassed.

The Grecian cities are the earliest of whose architecture we can form an idea as a whole. The temples and pyramids of Egypt arise among undistinguishable masses of ruins; the remains of Nineveh and Babylon are dug out of heaps of superincumbent earth. In Athens, on the contrary, the temples may be in a ruinous condition, but the ground-plan of the ancient city remains, and there are sufficient *indicia* to enable us in imagination to reconstruct the city of Pericles. The traveller, ascending the western slope of the Acropolis, still sees the portico of the Propylæum built of Pentelican marble with its six Doric columns thirty feet in height, its Ionic corridor, and its five doorways where once were the great doors of bronze; the Parthenon, rising above all the surrounding buildings elevated on a platform; and the Erechtheum with its portico of statues of Athenian virgins. Descending he passes by the Cave of Aglauros, the Grotto of Pan, the Fountain of Clepsydra, and the Temple of the Winds, to where the Theseum, standing on an isolated platform, overtops the surrounding structures. Through the Pnyx and the Agora, once filled with statues and altars and temples, through the Royal Colonnades and the Painted Porch, and through the Gate (so called) of Hadrian, he comes out on the great Theatre of Athens, where were performed the tragedies of Æschylus, Sophocles, and Euripides; thence through the street of the Tripods, so-called from the row of temples to Bacchus which lines it,* he emerges on the Odeon and thence proceeds to the vast and elevated platform where stands the Temple of the Olympian Jupiter, one of the seven wonders of the world. The Corinthian columns of Pentelican marble which decorated its front are still standing, but the sculptured pediment which they supported is gone.†

* These temples bore on their summits tripods dedicated to Dionysus or Bacchus, the patron deity of the drama.—Wordsworth, p. 215.

† An admirable description of Athens in the days of Pericles is given by Dr. Wordsworth in his work on *Greece*, pp. 192–216.

It will be seen that the ancient Athenian dwelt in an atmosphere of art. His daily walks led him through streets lined with temples, whose every surface presented groups of sculpture, the works of the chief artists of that or any day. In whatever direction he turned his eyes, the Parthenon, the Erechtheum, the Theseum, or the Temple of the Olympian Jupiter, on their elevated platforms, rose conspicuously above the surrounding mass of marble. On either hand were groups which embodied the history or mythology of his country, or the principles of his religion. And all this art was in its way perfect. Even in the *entasis* or swelling of the column, and the carefully studied deviation of the ground-lines from the exact horizontal, the Grecian architect conferred a grace to which his modern imitators have vainly aspired. It is not, therefore, remarkable that the Athenian should have been, above all men of his time, intelligent, cultivated, and refined.

It should be remembered, however, that the beauties of Grecian architecture were designed strictly for external effect. The temple was not itself so much the place of worship as the shrine of the divinity to whom worship was rendered. For these reasons it stood on an elevation—the priest and the altar stood generally before it, and the worshippers assembled on the broad platform or on the steps by which it was ascended. Requiring no windows, the whole external surface presented one unbroken line of ornament. The columned portico, the sculptured metope, the tympanum adorned with what might be styled a picture in stone, were all addressed to the outside observer, and intended to enhance the veneration of the multitude. These considerations show the utter unsuitableness of the Grecian temple for modern purposes, and especially for Christian worship. A single glass window introduced into such a building destroys its symmetry, and jars on the beholder with a sense of unfitness. When windows take the place of metopæ, and fill the intervening space between every pilaster, the apparent solidity of the building is gone, and it appears tasteless and unmeaning.* What shall we

* Another element of unsuitability lies in the fact that the Grecian temple was essentially a framework for sculpture. The sculptures of the

say, then, of the modern architects, who, by way, we suppose, of christianizing the style, have elevated spires from pointed pediments?

This peculiarly external character of Greek art was pre-eminently illustrative of the nation. They were not a domestic people. Their enjoyment, their occupation, their daily life, were all for the outer world. Of their domestic life we have comparatively little record. Women took no part in the social intercourse; and, while the outdoor life of the Athenian is associated with the idea of intellect and refinement, his indoor life presents little beyond a picture of dissipation and self-indulgence.

It is a commonly received opinion that the Romans derived the most of their art, and especially their knowledge of architecture, from Greece; and that, while by the mixture of styles they vitiated the purity of its taste, the improved knowledge manifested by their great works, and especially by their arches, bridges, and *cloacæ*, was the result of their own discoveries. Researches in Etruria have, however, established the fact that, long before the Romans were familiar with Grecian art, long even before Romulus laid the foundation of his city, a people existed in Italy who had attained a degree of civilization to which in some respects that of Greece itself was secondary. Of these people no trace exists beyond their architectural remains; but these show that they were well acquainted with the higher principles of masonry, and were the true source whence the Romans derived their knowledge of architecture. Unlike the rude polygonal masses which form the walls of Mycenæ and Tiryns, the walls of the Etruscan cities were built of rectangular blocks laid in courses and skilfully chiselled. The cities have disappeared, but traces of the walls remain. It was from the Etruscans that the Romans derived their knowledge of the arch, of

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Greeks were intimately associated with their religion and their history. Grecian mythology is, however, unmeaning in modern architecture, and to furnish suitable ornaments modern architects are reduced to the trite and barren commonplaces of allegory.

which they were, if not the inventors, at least the earliest people on whose buildings it distinctly appears. Of the arch the Grecians and the Egyptians were probably ignorant, for the vaulted roof of the treasury of Athens at Mycenæ is merely a rude dome formed by converging horizontal courses of stone, and the arch at Thebes (the only genuine specimen found in Egypt, for that of Saccara is a simple lining of the rock), bears strong evidence of Roman workmanship.* The Etruscans, however, preserved the arch in perfection—witness the gate of Hercules at Volterra,† and the gates of the theatre of Ferrento at Viterbo. But their use of the arch was not confined to gateways. Bridges still exist spanning the rivers and ravines of Etruria, on which the stalactites formed indicate an antiquity far exceeding that of Rome, and traces of aqueducts‡ and vaulted sewers,§ which must have in the first instance suggested the mighty works of the same character at Rome. In the neighborhood of their ancient cities are found traces of paved roads long anterior to the Via Appia; and they have left still more remarkable evidences of their advancement in the tunnels (*cuniculi*) with which they penetrated the solid rock, and the conduits (*emissarii*) with which they drained their overflowing lakes,‖ and diverted the courses of their rivers.¶

It is remarkable that, from the remains left by these people, we are enabled to form some idea of their cities. These suggestions are found in their *necropoleis*, or cities of the dead, which, unlike the sepulchral monuments of Greece and Rome, are, as in Egypt, hewn from the solid rocks. These *necropoleis*, from their uniform plan, were evidently constructed on the model of their living cities. Not only are the rocky tombs arranged in regular streets, but at intervals en-

* Gwilt, p. 34. † *Ib.*, p. 74. ‡ Mrs. H. Gray, p. 289.

§ The *cloaca maxima* is attributed by Pliny (xxxvi., 24) to Tarquinius Priscus, and by Livy (i., 38) to Tarquinius Superbus; both of whom were natives of Etruria.

‖ Niebuhr, i., 132. ¶ Pliny, iii., 20.

close squares like the piazzas of a modern city. The interior of the tombs are divided into apartments, of which the principal bears a close resemblance to the *atrium*,* or hall, which it is known that the Romans borrowed from the Etruscans. The walls are pannelled in relief, and in places carved into arm-chairs with footstools, and the chambers are filled with articles of furniture of a similar character to those found in Pompeii.†

Thus, we find in the architecture of a defunct nation clear evidence of a high civilization and refinement existing in Italy long prior to the foundation of Rome, and from which Rome herself received her chief lessons in art. From these remains we learn that, although it was from Greece that Rome derived the ornamental features of her architecture (in which respect, however, she was far from improving on her teacher),‡ for the great works which render her famous beyond all cities she is indebted to another race, a race, like her own, purely Italian.

The Coliseum, the greatest architectural wonder of ancient Rome, is itself a monument of Etruscan architecture. The elliptical form of the building, its structure rising in successive tiers of arches, its very character of amphitheatre,§ were all developments of Etruscan ideas, and totally opposed to the Grecian modes of building. Vast as is this structure, it is only

* The *triclinium*, or dining-hall, with stone couches on three sides, is also found in the Etrurian sepulchres.

† *Tombeaux Etrusques*, par M. Lenoir.

‡ One remarkable deviation made by Roman architecture from the Greek model is that, while in Grecian architecture the contours of the mouldings are formed from sections of a cone, in the Roman they are always segments of circles.—Gwilt, p. 106.

§ Paoli thinks that amphitheatres were first used by the Etruscans, and by them introduced into Rome; that the people in question first exhibited their games in narrow valleys, and that the spectators were ranged round the sides of the hills; that, when their sports were exhibited in cities, an arena was dug into the level ground, and the earth thrown out formed into seats, and, when the excavation was deep enough, the amphitheatre was enclosed with a wall, and the seats formed of stone.—Gwilt, p. 96.

within a recent date that its full dimensions have been discovered. Recent excavations among the *débris* which surround its arches and encumber its arena, have resulted in the unearthing of the original pavement of herring-bone pattern at a distance of twenty feet below what was long supposed to be the floor of the amphitheatre, and corresponding explorations on the outside have exposed the vast, funnel-shaped dormitories, through which the corpses were removed and the wild beasts admitted to the arena, and by means whereof the whole surface was flooded for the naval combats which were there presented.

Wonderful as are the amphitheatres, the palaces, the baths of ancient Rome, these are not the architectural works which most strongly indicate the character of the people. We see in these works the lavish hand of the emperors, who, having deprived the people of their liberty, at first sought to reconcile them to the change by surrounding them with all that could gratify the eye and the taste. This was the case with Augustus, who boasted that he found Rome a city of brick and left it a city of marble. The works of his successors, although in some instances erected for the sake of gratifying the people, were in general the mere exponent of their own luxury, prodigality, and ostentation. These emperors imported the Grecian artists, and engrafted the Grecian art on the ancient Etruscans—witness the vast circular walls and domed roof of the Pantheon, to which Agrippa* appended a Grecian portico with Corinthian columns, but without ornamentation, and decorated the interior likewise with columns. Thus, the ornamental architecture of Rome speaks but of the decline of its liberties and the vices of its rulers.

The architecture which most truly indicates the greatness of the Roman people, in those days when the people acted for themselves, are their great public works, their aqueducts,†

* About A. D. 14.

† The aqueduct of Quintius Martius carried water to Rome from a distance of thirty-eight miles over a series of arcades seventy feet in height, and had three channels, one above the other, conveying the water from different sources.

their roads, their bridges, and their *Cloacæ*. These were the products of the republic—of a time when the study of the people was to secure comfort and convenience for the masses of the citizens, and to strengthen the power of the city. It was this spirit which prompted the construction of these works that made Rome the mistress of the world; the spirit which controlled the Empire rendered her a prey to barbarian invaders.

The discoveries at Pompeii have enlightened us extensively on the subject of the domestic architecture of the Romans, at a period, however, when the Grecian element prevailed so extensively in Roman art that only the ground-plan can be considered strictly national, the architecture being altogether Grecian. The entrance was still through the Etruscan atrium; but, instead of the projecting beams which supported the ancient roof, it was sustained by elegant Grecian columns. The peristyle was purely Grecian in design—but the *triclinium* again was Etruscan. These unearthed dwellings evidenced the high degree of luxury and even of the modern refinements which the Romans of that day had attained; but they also tell largely of the debased morals and enervating practices which contributed to their downfall.

Before taking leave of the architecture of Rome we should refer to the combination by them of the Etruscan arch with the Grecian column—a combination which produced the Basilica, and thus, by degrees, led to the construction of the mediæval cathedrals, opening beauties in the art of which the Greeks had no conception.

The Basilica was the model of the first Christian temples, not, in all probability, from any symbolical notions, but from the peculiar facilities offered by that type of building. The great nave or body of the Basilica, with its three aisles, in which merchants and traders of all nations were wont to congregate, would suggest the gathering of multitudes for public worship, while the tribune or apsis, in which justice was administered, with its elevated platform lighted by a semi-dome, seemed naturally the place for the most solemn

religious celebrations. Thus the nave, the aisles, and the chancel or apsis of the modern cathedral, are not of Gothic origin, but are the offspring of the Roman Basilica.* The Christians, carefully avoiding the use of the heathen temples (which, indeed, were but ill adapted for the worship of an invisible Deity), adopted the Basilicæ for their churches, and thence erected their early places of worship on the same model. The deserted temples furnished numberless columns, with which the new churches were constructed, and, in the absence of architraves, or perhaps because the assembled worshippers required more height for purposes of ventilation,† arches were spanned from column to column which supported walls on which, perhaps for the same reason, an open, timbered roof was raised. Thus grew into form the church of the early Christian—a design which, even now that the pointed arch has succeeded the circular, continues to furnish a great part of the plan of our modern places of worship.

We are apt to associate the circular arch and domed roof of the Byzantine style—as the architecture derived from the Basilica has come to be called—with the idea of Oriental and Mohammedan worship, and to contrast it with the Gothic as the style exclusively Christian. The error of this idea will be apparent when we recall the fact that the principal mosques and places of Mohammedan worship, which we find in Constantinople and the surrounding cities, were originally either of Christian workmanship‡ or taken from Christian models,§ and that it was not until the fifteenth century that these cities were taken by the Turks, and the Christian tem-

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* *Βασίλειος οἶκος*—literally, Royal House—the name given to that portion of the palace where justice was administered.—Gwilt, p. 109.

† It should be remembered that the heathen worshippers always assembled *outside* the temple; the Christians, on the contrary, *inside* the basilica.

‡ Notably the mosque of St. Sophia, which was erected under Justinian, who is said by Gibbon to have exclaimed on its construction, "I have vanquished thee, O Solomon!"

§ Gwilt, p. 121.

ples diverted to Mohammedan worship. Still, for the first twelve centuries of the Christian era, the architecture of most of the places of worship, not only in southern Europe but in France, and even in the early Norman churches of England, appear to have been principally constructed on the Byzantine, or, as it is perhaps more properly called, the Romanesque style.*

Much learning has been expended on the discussion of the origin of the Gothic or pointed style of architecture, which appeared almost simultaneously throughout Christian Europe about the beginning of the thirteenth century. The theory that it was suggested by the inter-arching trees in the vistas of the German forests has been vigorously combated, and, it must be confessed, rests on slight external or historical evidences. But, in the absence of a theory which is better supported (and none of those adduced have any important historical facts to sustain them), we may well rest contented with the internal evidence offered by the points of resemblance in the design itself, with the corroborating fact that the earliest and all the finest specimens of Gothic architecture are found in the very land of the forest—Germany. Whatever may have been its origin, the Gothic style so strongly appealed to the æsthetic instincts of the people of Europe that, for two centuries, it obtained almost to the exclusion of all others; and to this period are Germany and France indebted for the wonderful cathedrals of Strasbourg, Cologne, Rheims, Amiens, and Rouen—and, above all, of Notre Dame de Paris—which are still the pride of those nations and the admiration of the traveller. The Grecian architect introduced the sculptured pediment and frieze; the Etruscan the arch and dome; the Roman the Basilica; but to the Gothic architect we are indebted for the cathedral and the spire—features of grandeur and beauty which were unknown to the ancient cities, and in which, for

* The cathedrals of San Marco at Venice, of Pisa, of Worms, and of Metz, as well as portions of the cathedrals at Gloucester and Ely, and the choir at Canterbury, are specimens of this style.

the first time in the history of architecture, the spiritual element predominates over the material.

Here, again, we have an instance of the value of architectural remains in illustrating the tendencies of the people from whom they emanate. The religion of Egypt was a gloomy mysticism; the nations of the East, with their luxury, the Greeks, with their refined beauty, the Romans, with their vigorous and comprehensive sense of utility, were all essentially material. In the Gothic architecture, with its pointed arch, its heavy shadows and tapering spire, we discern the spiritual tendency of the northern nations. Instead of delineating the finite, the Gothic temple suggests the infinite. It makes no pretension to the perfection of Grecian art—it is full of faults, contradictions, and difficulties, which the utmost skill of the architect has been unable to surmount; but in its very imperfections it seems to express the constant striving after the unattainable, which renders it the fitting architectural type of the faith which has adopted it as its exponent

The Gothic, as a distinct style of architecture, terminated in 1387 with the cathedral at Milan. From that period, gradually blending with the old Roman forms, it developed into the Italian, of which the principal type is found in the great church of St. Peter's. The cruciform ground-plan and the rich tracery of the Gothic style are retained, but the column and circular arch of the Basilica has in general superseded the springing or pointed arch, and successive stories of windows, with string courses and mouldings, replace the long unbroken lines of the earlier cathedrals. But the distinguishing characteristic of this style of architecture is the cupola—the realization of a problem which for a long time perplexed the architect who had tried in vain to unite the four sections of a cathedral of unusual size (Santa Maria del Fiore, at Florence), under the usual coverings of an Etruscan dome or a pointed Gothic roof. It was Brunalleschi, a Florentine architect, who solved the problem,* by combining the circular base of the dome

* Gwilt, p. 132.

with the arch formed by the intersection of concentric circles, which was the underlying principle of Gothic architecture. The result was the cupola; a covering which rendered possible the construction of those immense cathedrals which had till then been considered impossible.

The Renaissance, which produced the architectural discoveries whose results are seen in the monster cupolas by which modern Rome is recognized afar off, was also the parent of a system of domestic and palatial architecture which has gradually extended itself over Europe. The palaces of Rome have well been characterized as among the finest architectural works extant. From this style are derived the successive tiers of windows connected by string courses or balconies, and surmounted by a projecting cornice, which has been found so useful and so adaptable in modern building. Yet this school of architecture, with all its grace and beauty, is but a combination of various antique styles, which the classic architects would undoubtedly have rejected as incongruous. In the Farnese Palace the windows of the second story are flanked by columns whose entablatures are crowned alternately with triangular pediments and Etruscan arches; in the third story are circular-headed windows, crowned with triangular pediments; the loggia is an Etruscan arch, flanked by Grecian columns.* Yet this commingling of styles in the façade of an extensive building is productive of a singularly graceful effect, and has furnished models for much of the street architecture of the present day. To what may be strictly called *street* architecture—the blending of a succession of independent buildings into one harmonious whole—this style is peculiarly adapted; and street architecture being pre-eminently the architecture of the present day, the favor which the Italian style has acquired is not surprising.

The Farnese Palace, the Church of St. Peter, and the class of buildings commonly known as Renaissance, belong to what is called the Roman branch of this department of

* Gwilt, p. 143.

architecture. In the Florentine we recognize still more distinctly the influence of the Etruscan model. Here were found used in the construction of buildings the same large blocks of stone, the same heavy circular arches, and the same absence of ornamentation in the façade; a want which in the Florentine palaces is supplied by the stupendous cornices which impart grandeur to the structure. The general effect produced is that of solidity, monotony, and solemnity.* The absence of ornamentation and the great solidity of construction in the lower stories may perhaps be attributed also to the political condition of Florence in the middle ages, when insurrections were of constant occurrence and the aristocratic families were constantly liable to be besieged in their palaces, which were therefore required to be miniature fortresses. These are the characteristics of the Sforza, Pandolfini, and Pitti palaces at Florence, and of the Piccolomini palace at Sienna.†

While the school of Florence is characterized by solidity and monotony, that of Venice is distinguished for lightness and elegance. The prominent feature of this style, the basement, usually of massive construction, and with little ornament save what is called rustic work, supporting a façade proper of highly ornamental character, but commencing at what in Florentine and Roman buildings would have been called the second story, appears the natural result of the plan of the city; rising from the waters, its streets canals, the lower stories of its palaces would be of little use except for water-fronts and offices, and would hardly be conspicuous except from the gondolas, while the upper stories would naturally constitute the living parts of the edifices, and be principally relied upon for architectural effect. A colonnade raised over the basement is the usual substitute for a balcony, and for this reason, or perhaps from the early intercourse of Venice with Greece, the Grecian element is far more conspicuous than in the other Italian schools.

The republican, or rather aristocratic element, in the institu-

* Gwilt, p. 136. † *Ib.*

tions of the Italian government is evidenced in the large number of palaces with which the cities are adorned. Where numerous individuals, wealthy and powerful, but with more individual or family pride than public spirit or patriotism, desired to perpetuate their names by means of their habitations, palaces and luxurious dwellings would arise on every hand; while the grand or monumental works (except such as were prompted by religion or superstition) would be comparatively few. This is the case in Florence and in Venice; while Rome, where the *quasi*-monarchial government of the Papacy is blended with the aristocratic element, is as eminent for her vast public buildings as for her private structures.

It is to Italy, and to a long period of indirect Italian government, that France is principally indebted for her architectural triumphs. Prior to the sixteenth century, although France could boast numerous Gothic cathedrals of almost unexampled magnificence, the palatial architecture, of which we have remains, was, as a rule, heavy and barbarous, suggestive of the desolating wars of France and Burgundy and the feudal ages, when the principal object of every structure was defence. The wars in Italy, under Charles VIII., Louis XII., and Francis I., familiarized the French with the architecture of Italy, and the last-named introduced a number of Italian artists into France, whose influence was speedily perceptible in the architecture of Paris.* But it was under the succeeding reigns that the influence of Italy was most powerfully exerted; the sixteenth and the first part of the seventeenth centuries saw France under an almost unbroken succession of rulers of Italian blood. Catherine de Medicis, despite the perfidy and cruelty which have associated her name with tyranny and crime, was in her feeling for art a true daughter of the distinguished house to which she belonged. It must be remembered that Catherine's influence in France was not limited to the period of her actual regency. During the reigns of her sons Francis II., Charles IX., and Henri III., she was to the day of her death the

* Gwilt, p. 152.

actual sovereign of France. To her patronage is Paris indebted for the designs of the Tuileries and the Halle au Bleds, and the architectural production of Philibert Delorme, who may be justly styled the father of French architecture, and of whom Chambrai remarked: "Qu'il avait vu les plus belles choses de Rome avec des yeux encore préoccupés du style Gothique." * This probably unconscious modification of Italian styles by Gothic instincts is the key to the principles of French architecture. The second wife of Henri IV., in whose time the principal edifices of that reign were constructed, was likewise a daughter of the house of Medicis; and at her instance Jacques de Brosse designed the Luxembourg, on the model of the palaces of her native city.† During her regency and the reign of her son, Louis XIII., a similar Italian taste controlled the French Architects. With the regency of Anne of Austria, a Spanish princess, a change in the national taste might have been expected; but her prime minister and favorite, the Cardinal Mazarin, was likewise an Italian; and although the wars of the Fronde and the general disturbances of the regency, as well as the avarice of the prime minister, in some degree arrested the embellishment of the city, the taste of the people was not materially altered.

Louis XIV. lost no opportunity of adorning Paris with costly structures, but his taste led him to patronize the corrupt schools of Boromini and Bernini, and he actually induced the latter to visit France for the purpose of designing the palace of the Louvre. Bernini, however, abandoned Paris in disgust, and the Louvre was really designed by Perrault,‡ who substituted for the heavy style then in vogue the light and graceful forms of the Venetian school. The combination of the Grecian and Roman forms which the Venetian style admits, is in this instance rendered peculiarly beautiful by the erection of a sculptured pediment over the centre of the Colonnade; and the Louvre, with all its defects, presents one of the most splendid façades which Europe can boast.

* *La parallele*, par Chambrai.
† Gwilt, p. 153. ‡ *Ib.*

Much of the architecture of the reigns of Louis XIV. and Louis XV. is disfigured by the vicious style introduced by the two Italian artists heretofore mentioned. The whole system of Grecian architecture, as adopted by the Italian school, was by these artists inverted. Curves were substituted for straight lines, even in the architrave and entablature; arches were bent into slopes representing leaves and flowers and every species of fantastic design; columns were elevated which supported nothing; and arches introduced into the middle of a frieze. This vicious style continued to disfigure a great portion of the French structures during these two reigns. Yet these reigns were distinguished by the works of Mansart, the architect of Versailles; of Gabriel, who built the Colonnades to the Garde Meuble in the Place de la Concorde; Antoine, the architect of the mint; and Soufflot, to whom Paris is indebted for the Pantheon, which ranks fourth among the great modern churches of Europe.

The street architecture of Paris is the most beautiful in Europe. The palaces, theatres, churches and other structures which line its streets may properly be called monumental; and although finer individual specimens may be found in Rome and Florence, in no other modern city do we live in such an atmosphere of art, and nowhere else do we so fully realize that we are in the midst of a people of instincts and education essentially artistic.

Although specimens remain of Roman and Anglo Saxon constructions in England, the national architecture cannot be assigned a definite starting point prior to the Norman Conquest in 1066. The Norman style of architecture, strictly so-called, was principally confined to the construction of castles and churches, the battlemented walls and turrets of the former buildings furnishing models to several of the colleges at Oxford. The Norman churches and cathedrals are generally in the Byzantine style of architecture, and are distinguished rather by profuse and varied ornamentation than by any elegance of design. The plan of most of their façades—three windows in an upper story occupying the space of a single

arch in the lower—must have been wholly opposed to all our ideas of beauty.

The Gothic style, when introduced into England, retained its hold on the national taste for a longer period than on the Continent; and in its various forms of the Early English, the decorated and the perpendicular or florid,* continued through the reigns of the Tudor sovereigns. To these periods England is indebted for her finest specimens of ecclesiastical architecture. The early English period produced Westminster Abbey; but the cathedral architecture of all these periods is very much mixed, portions of the building being constructed in one style, and the remainder in the fashion of a later date. Old St. Paul's was a specimen of the Norman architecture, but was undoubtedly finished after the model of the early English Gothic. The colleges at Oxford are also instances of the combinations of the styles of various periods. Of Christ Church the nave and choir were constructed in Anglo Saxon times, and originally called the Priory of St. Frideswide;† the north transept is Norman, the chapter-house is early English, while the college itself is constructed in the Tudor or florid Gothic style. Magdalen College and Merton College combine the various styles of Gothic; University College, Oriel College, and Brazen Nose College are Gothic and Elizabethan; while Baliol College has experienced so many alterations that the later portions are in the modern Italian school. Queen's College is a complete specimen of Italian architecture. Thus Oxford may be said to present a history of British architecture from its earliest days.

The accession of Elizabeth was the signal for an attempt to engraft classic ideas on the Gothic architecture of the previous reigns. The curious anomalies resulting from this commixture are too evident to require comment; but to the Elizabethan period belongs the credit of the large and commodious private residences which began gradually to

*Parker's *Glossary of Architecture*, vol. i., p. 239.

†Ingraham, vol. i., pp. 10, 11.

supersede the old castles and baronial halls, and indicated that the nation was emerging from an age of feudal wars and intestine commotions into a period of peace and prosperity.

In the early part of the reign of James I., the great architectural revolution was introduced into England by Inigo Jones, who substituted a genuine Italian style for the bastard Italo-Gothic which had prevailed under Elizabeth. To this architect England is indebted for her purest and finest types of domestic architecture. The purely Italian style introduced by this master was, however, found to be not altogether suited to the climate and habits of the English, and was subsequently modified by Wren and Vanbrugh.*

Of the street architecture of London before the time of the great fire, we are enabled to form a tolerably accurate idea from a picture taken in 1638 representing the procession of Marie de Medicis on her visit to Charles I. and his Queen.†

The scene portrayed is at Cheapside; at that time, as at present, one of the principal throughfares. The houses would seem to be principally of wood, or perhaps lath and plaster; they have pointed roofs with gables fronting the streets; the second story projects over the first, and the third over the second. Many of the houses have oriel windows, and some show projections resembling small turrets. The windows in many cases are latticed. Signs are hung out from the stores, and the principal feature in the picture is the cross erected by Edward I. in memory of his Queen, Eleanora of Castile. We can imagine how London must have impressed the French queen, accustomed to the magnificent street façades of Florence and other Italian cities, and even the Italianized architecture of Paris at that day.

The great fire in 1666, sweeping away a vast portion of old London, and leaving a clear field for the labors of Sir Christopher Wren and Vanbrugh, proved, like many such disasters, a blessing in disguise. The architects of that day were fa

* Gwilt, p. 207.

† Entrée Royale de la Reine Mère du Roi, par La Serre.

miliar with both Italian and French art, which, during the exile of the royal family, they had many opportunities of studying, and thus the great Italian models were reproduced by Wren in St. Paul's Cathedral, the Monument of London, and the library of Trinity College, Cambridge. One of the principal innovations of this period was clothing the form of the Gothic spire with a dress of Italian architecture, a combination which results in the modern steeple.*

The reign of Anne was distinguished by the productions of Vanbrugh, who, despite the harsh criticisims of Pope and Swift, is now allowed to have contributed more original and picturesque ideas to English architecture than perhaps any of his predecessors. In the construction of Blenheim Palace he is justly said "to have united in one building the beauty and magnificence of the Grecian architecture, the picturesqueness of the Gothic, and the massive grandeur of a castle."†

The architecture of England may be said to present an epitome of the history of the nation. The Druidical ruins of Stonehenge still speak of ancient Britain; the Roman remains yet tell of Cæsar's conquests; the few Saxon structures of the race who lived in comparative hovels and lavished their means on their stomachs; the rich but barbarous Norman architecture of the time when every great man's house was a castle. The pointed Gothic tells of the Plantagenet, lavish, religious, and warlike; the florid Tudor style of the period when religious fervor gave way to royal ostentation. The Elizabethan structures tell of the time when England, enjoying an unwonted sense of peace and security, directed her attention to domestic architecture, and built mansions for residence rather than defence. The growth of the Italian styles under the Stuarts indicates the enlargement of the British mind, the extended intercourse with foreign nations, and the advance of taste and knowledge which attended the development of England into a first-class European power.

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* Gwilt, p. 214.

† *Essay on the Picturesque*, vol. ii., p. 211.

The present condition of society, while developing in the highest degree the perfection of domestic architecture, is, for that very reason, less favorable than its predecessors to the production of great works of art. A state of things which constitutes every man the architect of his own fortunes, where wealth passes from hand to hand, and where fields for the profitable employment of money are everywhere enlarging, is not that which contributes to the growth of vast monumental structures to elevate the nation's glory or to display its piety. For these reasons it is not to be supposed that American cities will at any time display architectural wonders to compare with their sisters of the old world. Yet, that our street architecture should at one day reach a point at which it shall exert a chastening and refining influence on the public mind and taste, is an object neither unworthy of aspiration nor impossible of attainment. In New York, especially, which contains a floating population of the lowest and most turbulent class, with no association, patriotic or national, and under no restraint save from the arm of the law, the necessity of every humanizing influence is peculiarly apparent.

If this influence is to be exerted—if American architecture is ever to hold a place corresponding to the greatness of the nation—a few simple rules should be remembered and practically enforced. All shams should be avoided—architecture should be honest—and the love of asserting individual independence in stone and marble should be subordinated to a sense of symmetry and fitness. The architect, whose sole object is to extinguish his neighbor by erecting a building which shall dwarf the other into insignificance, or mar it by a violent contrast of style, is radically false to his art. He is not aware that the offence is its own punishment, that the ambitious erection is as essentially marred by the inharmonious combination produced as is the rival it sought to destroy. Let our architects then avoid the temptation of cheap show—let solidity, unity, and symmetry be the object of their studies, and let nothing be undertaken which the means are not at hand to carry out in perfection.

ART. II.—1. *Memoir of Sir William Hamilton, Bart.* By JOHN VEITCH, M. A. Edinburgh and London. 1869.

2. *Fragmens de Philosophie, par M. William Hamilton, professeur de logique et de metaphysique à l'universitè d'Edimbourg.* Traduit de l'anglais par M. LOUIS PEISSE, avec une préface, des notes et une appendice du traducteur. Paris. 1840.

3. *Discussions on Philosophy and Literature, Education, and University Reform. Chiefly from the Edinburgh Review. Corrected, vindicated, enlarged in notes and appendices.* By SIR WILLIAM HAMILTON. 2d ed. 1853. London and Edinburgh.

WHILE keeping in view the nobler uses of biography, a very barren record of the daily life of such a man as Hamilton—the simple story of the eating and the drinking of one from whose intellectual table have fallen so many crumbs that repay the gathering—and over whose coffee and wine soared a discernment that gave no hint of their inspiration—while such a narrative would have been welcomed almost as a duty by the wise—there is that about Professor Veitch's memoir which may make it of use even to the relatively ignorant. Gratitude should prompt the scholar to turn the leaves of any record of one who has turned for him so many pages in the volume of human thought; but the pigmy, also, may seek this memoir, confident that such introduction to an intellectual giant as it will give him cannot but increase his own mental stature. Indeed, we have sometimes fancied that it is of just such examples as Hamilton's that the average American has greatest need. The scholar allows the attempt to precede the preparation, and in the end mourns that he did not inherit from his father, and as a national characteristic, less of the youth's confident rashness, and more of the well-poised energy of mature age. Our generals, too, often attempted after defeat the or-

ganization and the cautiousness they had spurned before. We sometimes insist upon swinging a sceptre that we cannot sway; and our huzzas are as apt to herald loss as gain. Now, apart from philosophy itself, there can be no better corrective of all this than the life of such a philosopher as Hamilton. It is possible, indeed, that we should not make the exception we have made. But we would not have it suspected that we think the pure philosophy too concentrated to be nourishing when men are prepared and willing to relish it. We are, however, conscious that very few of all mankind have shown any disposition to sit down to the feasts of unadulterated thought that have long been spread on the Continent and in England, and which we hope to see one day adorning America. Nay, it *must* be so, or our national life will ultimately be a failure. No amount of material resources can atone for a lack of mental wealth. Though the oceans bound our empire, it must remain but a geometrical surface unless it reaches also to the stars; and the bridging of Niagara or the laying of an ocean telegraph must be counted as little in comparison with attempts to span the time-stream that separates the present from the future, or to elicit a queen's or a president's response to the questions we ask of our spiritual life.

In so far as our philosophers stimulate to thought of this kind they prevent our paving the way to another of those "parentheses of darkness," which, monitors from the past, have, more certainly than any thing else, indicated that, notwithstanding progress in an infinite development, there is still a possibility that some one age may reappear as the portionless heir of those which have preceded it. At present, indeed, every thing would seem to be tending toward moral development, but that tendency owes its existence in great part to ignoble policy; and policy, though it may serve the centuries, has ever proven unfaithful to the cycles. In so far as our disposition to cherish good-will and multiform good-faith is the offspring of commercial convenience, we know that it must eventually "perish with the using." To thrust a more durable foundation beneath our moral and social system, and to

show men how strangely inconsistent with this care to plant fruit and shade trees for generations is their neglect to plant men tally and morally for the ages, has become, more than ever before, the practical work which great thinkers have to perform, and in doing which they shall merit the thanks of their usually unappreciative fellow-men. For, as Mill has said, "a true psychology is the indispensable scientific basis of morals, of politics, and of the science and art of education." In support of our position we beg to be allowed to suggest the source of the argument rather than the proof itself. It is briefly this: A Whitefield has become, or soon will have become, as impossible in our pulpits as an Edmund Keane in our theatres. Our active and somewhat anxious life seems to preserve the mental at the expense of the emotional, or, at least, to have brought the latter so under the control of the former as to have made of man a new creature. By this change, though the end may remain relatively the same, an alteration in the means is necessitated; our preachers must be re-schooled by our psychologists, and the professorship which has thus far, in this country, been deemed scarcely worth an endowment will become the cherished one of our colleges.

Leaving this a *rudis indigestaque moles*, we hasten the story of Hamilton, with its suggestions of what is possible in scholarship and influence, and its lessons of warning, making it one of our major aims to indicate the influence of his life upon his belief. And pleasant will it be, remembering the essential connection between mind and bodily manner, if we find in the outward life of the man fit source of the thought he gave us. Though the mills of the gods, indeed, ground but slowly in Hamilton's case, he would seem to have been fated by the circumstances of his birth for the position he afterward adorned. For he belonged to a race of professors, and many branches of his genealogical tree had been sheltered within the walls of Glasgow University. His grandfather and his father taught and died there, and there, on the 8th of March, 1788, in a house in the Professors' Court—now marked, as if significantly, No. 1—the philosopher first opened his eyes

upon a world he was destined to make broader and higher. That grandfather and father were professors of anatomy and not of mental science can be of much interest only to one who would introduce a happy thought into an essay on materialism. But that both filled such positions in life as they did, and that Dr. William Hunter could write of the father that it was to the interest of Glasgow to seek him as a professor rather than his to seek the professorship, are important, as enabling the subject of our sketch to escape condemnation on the ground of Carlyle's assertion that no truly great man was ever born of entirely stupid parents. It is probable, too, that we see the influence of his hereditary linking with anatomy, in Hamilton's conviction, in youth, that medicine was to be his profession, and in those zealously conducted surgical experiments which he continued almost to the time of his death. For although, as a cosmologist, he drew a line of separation between mind and matter, which is so far from a mathematical one, that a majority of philosophers have stumbled over it, yet he could scarcely distinguish his affection for one as greater than his interest in the other. In him George Combe found the most formidable opponent of phrenology. For, after perhaps a more careful examination of the anatomy of the brain than had hitherto been made, Hamilton pronounced that science "a mischievous humbug." He published various papers upon this and kindred topics; and has left direct evidence of the extent and accuracy of his studies in a statement that he had carefully weighed with a delicate balance, tabulating the results, more than one thousand brains of some fifty species of animals. Mrs. Hamilton says of the victims of these researches:

"There was a constant succession of young animals about the house, for the purpose of being experimented upon. Pins or wires were passed in various directions through their heads by Sir William, and the consequent effects upon their powers of motion, sight, taking of food, etc., were not only considered by him scientifically valuable, but were sometimes so comical as to afford us much amusement—indeed, to watch these vagaries was a favorite diversion of Sir William's.

"When he made a visit in the country, he took his instruments

with him, and would get hold of fowls and chickens, which he left with wires sticking in their heads, and which were sometimes sent to him months afterward to show how well they had thriven, notwithstanding this unusual treatment."

Other observations, that have often occurred to us as desirable, did not escape that acute mind. We refer to a study of the development of his own children. Hamilton, however, seems to have confined his attention to their cerebral and physical growth; to daily weighings, with measurements of their heads, and drawings representing their varying configuration.

It has long seemed to us that a servant of science, who could reasonably count on a liberal reward, would be the thoroughly-trained parent, abreast with the times in philosophical lore, who should observe, with the keen insight which such preparation would confer, the whole growth of her offspring—subjecting different children to various treatment, and carrying to a conviction in one the hint caught vaguely from another. But, while Hamilton thus manifested his curiosity with regard to the structure of the brain, there is not a hint throughout his works that he regarded it as any thing more than the principal haunt of the thought which he so often attempted to pursue into its hiding-place. Not one recorded word escaped his lips which indicated a reverence for the brain as the source of thought; in short, if living today, he would have no sympathy with the bold conception which makes it perform its functions in common with the other organs of the body.

But there is another and more important observation with which we hope to justify this detailed recital of his anatomical studies. The whispered suggestion of incompleteness and inconsistency in Hamilton's system of philosophy, which a few years ago startled the pupils of the great teacher, has recently cast aside the bated breath of merited reverence, and spoken in the full tones of animated controversy. The champions of the empirical psychology, necessarily selecting him as the conspicuous target of the opposing system, have, we fear, some-

times so far forgotten where it is that acrimony is most disgraceful, as to shoot with poisoned arrows.

That his recorded thought is incomplete as a whole system of philosophy we admit; and, in the course of our remarks, it will appear why this is so. But, to the same mental characteristics which are responsible for this imperfection as a whole, we are indebted for the completeness of the parts. As it was not the mental effort that he shunned, but the combined mental and manual labor of recording his conceptions, so the missing links which, by connecting and explaining, would, we believe, have rendered the charge of inconsistency impossible, are rather the fault of the careless hand than of an unwilling mind. His writings defend the latter against the accusation; the story of his life indicts the former. The best thoughts of most men, indeed, seem to visit them transiently, and, like dim stars, to be best seen by the edge of the mind's eye. But, when an attempt is made to grasp them and pin them to paper, they often become as unmanageable as Proteus. We have been led to believe that this was more than usually the case with Hamilton. He knew that some things were wanting, as, for instance, the further discussion of his ontology; but, instead of seeking the satisfaction of immediately supplying the deficiency, he found contentment in further preparation for the work.

That he died without accomplishing it, no one except his psychological antipodes will urge as proof that it cannot be done; while very many hope that, for the perfection of his doctrine, we have only to await the appearance of one gifted with the needed mental power, and who shall be willing to sacrifice the fame and enjoyment which aberration begets, and consent to fill a position similar in part to that of the Apostles. Every one will acknowledge Mr. Mill to have been not only the most able, but also the most anxious, to detect imperfection in the Hamiltonian system; yet, in his recent and his greatest work, in which he conducted what must seem to most a too hostile attack upon his dead antagonist, he has scarcely done more than prove the need of such con-

necting links as would enable us to pass with ease from one portion of the domain of thought to another. But, of Hamilton, least of all men, can the detection of a fault in his writings prove imperfection of thought. He may have made those transits which, to Mill's magnifying vision, seemed the passages of terrible abysses, with as much ease as Newton passed from the enunciation to the Q. E. D. of a geometrical problem. He was not a man to shun difficulties; but, as we have suggested, nothing could be more characteristic of him than, upon observing a seeming want of adaptation among the parts of his system, to pursue them to a reconciliation in his own mind, and then neglect to record the mental chase and capture. We trust that space will permit us to presently refer more specifically to Mill's examination; but we may here make room for the thought that a misunderstanding of the too elliptical notes of their chief might account for the suggested mistake in the course of the Mount Cenis tunnel. Certain it is that the anatomical studies are evidence of a catholicity of interest which is as good ground as we can have for a belief that he had not failed to reconcile his system, in his own mind, at least, with the progress of thought about him, and to measure important developments, in whatever department of science, by the unit he had constructed. And, where it proved inadequate, we believe that he did not refuse to remodel it. But the impossibility of anticipating the thought of the future, and, above all, the alterations in the received methods of psychological thought which an acceptance of Darwinism and cognate scientific speculations may demand, must render some, if not many, alterations necessary in order to adapt his system to the demands of the present hour.

Not the least significant feature of Hamilton's youth, when viewed in connection with the mid-life to which it led, was his association with Reid, who, as a patriarch in philosophy almost ready to part company with his thought, may sometimes have attracted the gaze of the, to him, child of promise, as he walked daily through Glasgow. For, although it was

not until his twenty-fourth year that Hamilton finally determined to abandon the study of medicine, he would seem through all those years to have cherished the cast-off mantle until he should be able to wear it to his own and the honor of him from whom he had received it. If he followed any man's precepts, he followed Reid's; and, where he deviated from them, he did it to adorn. He did not obey his predecessor when he taught him to neglect the past—ancient and middle-aged—as otherwise subtracting from an abundant present; nor, as the review of Cousin early proved, was he willing to accept any thing as final in philosophy which rested upon other than an extended and most thorough analysis of the very nature of thought.* In this, Hamilton and Kant were at one, rather than Hamilton and Reid. But, as to what Hamilton was sometimes pleased to call, because of its very rare acceptance, the characteristic doctrine of his philosophy, how nearly they agree. Arguing in favor of a Presentative Knowledge in every instance of immediate consciousness, Hamilton fortifies himself and Reid together—siding with one against the world. And when, speaking in his lectures of the doctrine of the Relativity of Knowledge, he declares this to be a "truth in the admission of which philosophers, in general, have been singularly harmonious, and the praise that has been lavished on Dr. Reid for this observation wholly unmerited," without subtracting aught from Reid he proves the value of that intimate acquaintance with the past, which the doctor thought would scarcely repay its cost. And what a suggestion of a rich mind liberal with its wealth, but whose wealth was not always wholly employed, is furnished in his annotations to Reid's works. "It was while engaged in the composition of his first course of lectures," says Professor Veitch, "that he commenced, and to some extent carried on, the edition of Reid's works, which was destined to occupy so much of his time and thought, and to be the receptacle of his

* "M. Hamilton connait tous les systèmes anciens et nouveaux, et il les examine à la critique de l'esprit Écossais."—*Cousin, Fragmens de la Philosophie*, p. lxxv. de la préface.

elaborate erudition. The taking up of Reid was a matter almost of accident, and had its origin in an occasion as slight as the conversation among some private friends, to which, as Locke informs us, his Essay may be traced.

One afternoon, in October of the year in which Sir William was appointed to the chair, he, along with Lady Hamilton, went into the shop of Mr. Tait, bookseller, then in Hanover Street. Sir William made some inquiry about the number of copies of Reid's works on hand, with a view to adopting portions as a text-book for his students in the forthcoming session. Mr. Tait suggested that Sir William should write a preface for a new issue. To this he agreed. Setting himself to write the preface, and to revise the sheets of the issue as they passed through the press, he grew interested in the work, added foot-notes, and, his conceptions of the whole matter widening, promised appendices in the form of supplementary dissertations.* Any time that he could spare from his lectures during the winter was given to this task, and he continued his editorial labors during the following years until the winter of 1839—the work gradually expanding under his hands until it promised to assume its present form and dimensions. In 1839, however, it came to a stop, owing to a difficulty in the arrangements for publication. Sir William had originally made no bargain with Mr. Tait; and, as the terms which the latter subsequently proposed were rejected by him as entirely inadequate remuneration for his labors, he took the work out of the publisher's hands. This course involved him in expense for printing, stereotype-plates, etc., to the amount of nearly £500. As he did not succeed in making immediate arrangements with any other publisher, the edition of Reid was abandoned for seven years, then resumed, and finally published for the first time in 1846.

It may be because Prof. Veitch has successfully resisted

* "On the whole, we cannot but regard these dissertations as the most valuable contribution to the progress of a true philosophy, in our country, within the present century."—*Morell's History of Modern Philosophy.*

the temptation to too highly color the childhood of great men that we are unable to discover any thing very peculiar in Hamilton's youth.

Yet, in so far as distinguishing features appear, they are such as we should have expected. He had been named William Sterling Hamilton. In his nineteenth year he writes to his mother, "You may always omit Sterling. It is nonsense having three long names." In his fourteenth, he writes: "I intend to ask Mr. Dean not to insist on my speaking (publicly), as I hate and execrate it." In his sixteenth, the teacher of his youth to whom he was most attached writes to his mother: "William, I see, is very anxious to become his own master, which has rendered it necessary for me to be excessively pointed and strict in every thing I require of them all." In the same year he laid the foundation of his philosophical library by the purchase of Quintilian's Institutes, Stewart's outlines of Moral Philosophy, and the Encyclopædia Britannica. In his eighteenth, he writes, like Niebuhr: "I don't wish to be introduced to any more people this winter. I shall be pestered to death with invitations, etc., which cannot be done without loss of time." Early in his nineteenth, he addresses his mother thus: "I do not know whether it was by intention or neglect you directed to me without any adjunct either before or after my name. You'll please to remember that, if you don't give me all my dignities, I shall direct my next letter to you, Elizabeth Hamilton, without any ceremony." And three months later: "I indeed confess that I find I have spent more money than I should, and would have been very sorry to have laid out so much money on any frivolous or unnecessary articles; but the money has only changed its shape. What was a little while ago bank-notes is now metamorphosed into the more respectable appearance of rare and cheap books; and, from the monotonous repetitions, 'The Bank of Scot promises to pay to the bearer on demand,' etc., they have now suffered the glorious metamorphosis of being converted into historians, and philosophers, and poets, and orators, and, though last not least, into physicians." These

are the germs of a philosopher, with which the great and successful effort he made, some years later, to prove his right to the honor of a baronetcy, does not very well accord; while his childish fancy for the Pilgrim's Progress and the Apocalypse was the early evidence of a liking for the marvellous which we should hardly have expected, but which, in after years, often afforded pleasant refreshment to a mind wearied with abstract speculation.

Here, too, is the first spark of the mixed Italian and Irish fire that edged his controversies in riper life; for, as Mill says, "though a strictly honorable he was a most unsparing controversialist, and whoever assailed even the most unimportant of his opinions might look for hard blows in return." But the quick temper, which had as noble a servant in the body that encased it in youth as it had afterward in the brain, was backed by a warm affection that always healed the wounds it had made, and retained for Hamilton as prominent a place in the hearts of his fellows as his dexterity gave him in their sports. In him the massive mind and great heart did keep company. For his only brother, Captain Thomas Hamilton—author of "Cyril Thornton," and "Ensign O'Doherty," of Blackwood's Magazine—his affection was great. For his university friend, Scott, he had such love as induced him to copy a journal which Scott's mother had kept of his last illness, and, years afterward, to name a son after the friend of his youth. Of the severance of a long friendship with Lockhart—after Scott, the most intimate of his schoolday friends—he was so unwilling to speak that it is impossible to determine the cause that led to it; while, of the effect upon him of the bereavement that he suffered in his thirty-ninth year, in the prime of his great manhood, we read that "so greatly was he prostrated by his mother's death that for some time he appears to have been without energy or spirit to make any exertion. Contrary to his usual methodical habits, he even neglected to return his books to their shelves, or to keep them in any sort of order. The result was the necessity of a somewhat ludicrous emigration from room to

room of the house; for an accumulation of confusion ensued in one apartment from which he could free himself only by taking refuge in another. This, in like manner, was abandoned when it had reached a similar state of disorder. At length he established himself in a large room in the upper story of the house, which commanded a view of the opposite coast and of the Fifeshire hills. He thought it less dismal than any of the usual sitting-rooms, associated as they were in his mind with more cheerful days. In the following year (1828) he removed to a smaller house in Manor Place, in which he continued to reside until 1839. Mr. De Quincey, who was in Edinburgh at this period, used kindly to break in on Sir William's evening solitude, accompanied generally by his eldest son and daughter, children of about eight or ten years of age. "While the two philosophers discoursed till the small hours of the morning, the two children would be lying asleep on a chair."

Such facts as these—and his affection for his children would furnish further evidence of the same thing—prove that Hamilton was not the emotionless creature (or creator?) that some would have him to have been. For, as if adhering to their youthful impression that great men are as unlike others in the narrow bounds as in the wider reaches of their thought, many affect surprise at discovering evidences of their humanity in their private lives, and have, in particular, regarded Hamilton as one in whom the mental was not coupled with an ethical discipline and development. Were we to seek to determine that which rendered his character less complete than it might have been, we should discover it in a defect of will rather than in an inability, sometimes, to compel his mind to labor contentedly and with its whole strength in a given direction. We should suppose that the mind of Sir William Hamilton was at the time of his death burdened with as great a number of plans unaccomplished as that of any man of recent times, with the exception, perhaps, of Coleridge. In this is the suggestion of an ordinary infirmity of weaker minds. Or was his conception of the work before him always

so grand a one that he forgot for the moment the wear and tear of body, and that he could not live forever? Whoever will study the preparation he made for, to him, so secondary a scheme as a proposed life of Martin Luther, will feel that an iron frame and a lease of eternity were needed to accomplish the much he hoped to perform. And how many minds death seized when it took his away! The whole world was then plundered without hope of recovery. All that rendered his Oxford career, if not the brightest, certainly the grandest that has been—all the rich results of such study as virtually restored Aristotle again to earth—the last recollection of obscure ones long ago dead—a high and perfect love of knowledge, unwilling to discriminate between that which the world approves and that which it condemns—doctor, lawyer, and great teacher—all these disappeared at once from the world.

The works he has left are the dimmest reflection of the man. They give no hint of that which was felt by those who saw him and listened to him, and knew his words to be no second-hand oracular responses, but the utterance of the god himself. In him that ancient possibility, universal scholarship, was as nearly realized as may be in this richer age. What had the poetry of George Buchanan, of Balde, of the triumvirate that Sannazarius headed in the sixteenth century—what had the writings of Baptista Mantuanus, or of Audoenus, to do with philosophy? What had medicine, or law, or a discussion of the Greek verb which should cite the opinions of Apollonius, Dyscolius, and Heradian, and a dozen more of whom the Royal Society had scarcely heard? Or the knowledge that could, follow Dr. Parr, into realms that he had thought solely his own, so closely as to compel him to turn upon his young pursuer with a "Why, *who* are you, sir?" Yet these were a part of Hamilton. And, if such an acquaintance with the facts that make human history as can view them without and within, and marshal them according to the natural order they disclose—if, in a word, the widest range of knowledge with the profoundest erudition, is the proper equipment for a philosopher, then was Hamilton prepared for the great work of his life.

From 1812 to 1820 he was professionally a lawyer, yet one who never gave his heart wholly to his work; and for whom, if his disposition to pursue the recondite rather than the practical part of his profession did not stand in the way of rapid advancement, his political opinions certainly did. Those were honorable years for Edinburgh. Dugald Stewart, Playfair, and Henry Mackenzie, old men, were still alive. Those were Sir Walter Scott's most creative years. Francis Jeffrey, too, was making the best of them, Campbell, Southey, Byron, Wordsworth, and Coleridge, furnishing the material upon which he worked. Thomas Brown, having relieved Stewart, was ornately declaiming his dogmatic criticism; while De Quincey, Wilson, and Lockhart were the promise of a time near at hand. To De Quincey we owe a racy picture of the Hamilton of 1814:

"In those days Wilson sometimes spoke to me of his friend Hamilton as one especially distinguished by manliness and elevation of character, and occasionally gazed at as a monster of erudition. Indeed, the extent of his reading was said to be portentous—in fact, frightful, and to some extent even suspicious; so that certain ladies thought him 'no canny.' If arithmetic could demonstrate that all the days of his life, ground down and pulverized into 'wee wee' globules of five or eight minutes each, and strung upon threads, would not furnish a rosary any thing like corresponding, in its separate beads or counters, to the books he was known to have studied and familiarly used, then it became clear that he must have had *extra* aid in some way or other—must have read by proxy. Now, in that case, we all know in what direction a man turns for help, and *who* it is that he applies to when he wishes, like Dr. Faustus, to read more books than belong to his allowance in this life. . . . . I was sitting alone, after breakfast, when Wilson suddenly walked in with his friend Hamilton. So exquisitely free was Sir William from all ostentation of learning that, unless the accidents of conversation made a natural opening for display, such as it would have been affectation to evade, you might have failed altogether to suspect that an extraordinary scholar was present. On this first interview with him I saw nothing to challenge any special attention beyond an unusual expression of kindness and cordiality in his *abord*. There was also an air of dignity and massy self-dependence diffused over his deportment, too calm and unaffected to leave a doubt that it exhaled spontaneously from his nature, yet too unassuming to mortify the pretensions of others. Men of genius I had seen before, and men distinguished for their attain-

ments, who shocked everybody, and upon me in particular, nervously susceptible, inflicted horror as well as distress, by striving restlessly, and almost angrily, for the chief share in conversation. . . . . In Sir William, on the other hand, was an apparent carelessness whether he took any conspicuous share or none at all in the conversation. . . . . In general, my conclusion was, that I had rarely seen a person who manifested less of self-esteem under any of the forms by which, ordinarily, it reveals itself—whether of pride or vanity, or full-blown arrogance, or heart-chilling reserve."

It was in 1820 that the two friends, Wilson and Hamilton, became the rival candidates for the chair of Moral Philosophy in Edinburgh, vacated by the resignation of Stewart, and the death of Brown. Before this, Sir William had made two short visits to Germany, both in the interest of literature. These appear to have been the only occasions on which he was absent from Scotland after his final establishment in Edinburgh. Like his fellow Scotsman, Carlyle (whose liking for Hamilton seems of a piece with his admiration of Edward Irving), he would appear to have reckoned much travelling among "shams." And, certainly, this was wisdom in one who had a world at his command, and who best loved to study with his family about him.

Though sixteen years of professional service would have been gained by Hamilton's appointment to the Chair of Moral Philosophy, yet, considering his greater fitness for the more exacting duties of the position he afterward filled, and, still more, the value of the work he meanwhile accomplished, it may be doubted whether it had been better for the world. Of this we may be sure that, when political propriety was weighed against mental fitness for the position, the former triumphed, and John Wilson was elected to the chair. But, as Lord Corehouse remarked, it was better to fail with such credentials as Hamilton offered than to succeed with any others; and, early in the following year, his recognized qualifications compelled even those who were hostile to his politics to concur in his appointment to the professorship of Civil History in the same university. To fill its duties was no great task, and Hamilton had leisure to pursue his investigations in his favorite fields.

It was during these years, too, that he sometimes varied his occupation with the anatomical studies to which reference has been made, with investigating the theories of animal magnetism, or even with observing the effects upon himself of large doses of morphia. The first of his purely philosophical publications was the famous article "On the Philosophy of the Unconditioned." It required much perseverance on the part of Professor Napier—who was stimulated by the determination to make the first number of the Edinburgh Review that appeared under his editorial care a success—to gain this from his learned friend. Hamilton's admiration of Cousin rendered him loath to assail so important a part of his doctrine as his assertion of the cognizability of the absolute; and he felt then—as he was compelled afterward to declare, when, as candidate for the chair of Logic and Metaphysics in Edinburgh, obscurity in his writings was claimed to unfit him for the office—that there would be an obscurity about it which no care on the part of the author could obviate, because of its being the result of a lack of proper preparation for understanding it in the reader. This article at once established his reputation on the Continent, where Kant's influence made it understood and read with admiration; and it is amusing to find Sir William compelled to reply to the letters that came from distinguished men asking for his previous works, that he could say nothing for himself excepting that he was "a graduate of Oxford and a member of the Scottish bar," and confessing his shame that he had written but little else.

Perhaps a feeling of this kind helped to conquer his reluctance to drive the pen, and so won from him other gems of philosophic thought. Napier continued to urge and Hamilton to write, and various complaints by the former because articles had been withheld till beyond the proper time and then sent in of length to exceed the limits stipulated for, were the *pastscenii* that introduced to the world the articles on Perception, on Logic, on the *Epistolæ Obscurorum Virorum*, the various papers on University Discipline, the Study of Mathematics, etc. It is difficult at the present day to assign

to the first of these their proper relative positions in the philosophy of Britain. The thinker had pursued a line of thought differing from all the home influence that bore upon him, and had reached conviction strange to the British Isles. We now know them to be in some respects unapproached; but then no one recognized their merit, and their first welcome came from abroad in Cousin's noble appreciation of his assailant, and like messages of approval. Then first took root in Britain a high and daring philosophic thought, which the language of Britain could once hardly express, but which she would now unwillingly forget. Even to his doctrine of the Unconditioned there is now no general hostility. Though startled by his assertion of the philosophic impossibility of an ontology, most men were willing to believe that its dangerous significance had disappeared when they found its author acknowledging with St. Austin that, although knowledge rests upon reason, belief may be founded upon authority; and confessing that it may be necessary to believe in order that we may understand, with Anselm, rather than, with Abelard, to seek to understand in order that we may believe. In fact, when Hamilton advocated the relativity of human knowledge, he but boldly asserted what all noted philosophers—with the exception of Schelling, Hegel, Fichte, and Cousin—had, either willingly or unwillingly, admitted before him. It was but another instance in which he gained admittance where others had knocked in vain. We cannot, of course, here turn aside and follow him; but we believe that *he* could safely venture among the Germans, who would carry the Scotchman with him; and that the definition of Schelling's opinion, with the criticism on it contained in this article, would better prepare for an understanding of our own Emerson than would all the remarks upon him that Britain has recently produced. During the sixteen years that had elapsed since their refusal to assign the chair of Moral Philosophy to Hamilton, the Town Council of Edinburgh had grown, if not wiser, at least more persuadable; and, in 1836, the emphatic

testimony in his favor of Cousin* and others best prepared to judge of his merits, prevailed over the charge of obscurity, of unsoundness, over the claims to honor of so able a rival as Isaac Taylor, and over (what was deemed by his friends the most dangerous to his success) Hamilton's refusal to acknowledge, by personal solicitation of the votes of the electors, that he sought the office as a favor rather than as a right—and a majority of four elevated him to the professorship of Logic and Metaphysics.

Hamilton, already in his forty-ninth year, was now *compelled* to be useful. Till the last moment, however, he read instead of wrote. The election took place in July, and the session commenced in November, but found Hamilton still in doubt as to the subject of the introductory lecture. Before, his wife had not only incited him to work, but had copied for him all he had written for publication, with much beside. Now, though the need of meeting his class three times each week compelled him to write, she still acted as his amanuensis. Each lecture was composed the night before its delivery upon rough sheets which Lady Hamilton copied as they were prepared—the lecturer and his secretary usually retiring at five or six in the morning, and awakening so that he could meet the class at one in the afternoon. Throughout the session of five months the work proceeded thus without interruption; and a new course was prepared in like manner during the following year—the first being those now known as the Lectures on Metaphysics, and the second as the Lectures on Logic.† And what lectures they are, when viewed in connec-

* "Sachez que M. Hamilton est de tous vos compatriotes celui qui connait le mieux Aristote; et s'il y a dans les trois royaumes de sa Majesté Brittannique une chaire de logique vacante, n'hésitez pas, hâtez-vous, donnez-le à M. Hamilton."—*M. Cousin, Fragmens de la Philosophie*, p. lxxv. de la préface.

† "Un rôle special, ou tout au moins principal, peut être assigné à chacun d'entre les philosophes Écossais. Hamilton fut le logicien de cette école, comme Hutcheson et Reid en avaient été les psychologues, Smith l'économiste, Ferguson le publiciste, Oswald le theologien, Beattie le moraliste."—*Biographie Générale*, t. 23, p. 255.

tion with the purpose for which they were prepared. We can even read them with enthusiasm; with how much greater could we have listened to them, knowing them to be the hastened thought of him who spoke them. The noble appearance of the man—the order without a flaw—the learning that knew no exhaustion—the most inspiring feeling that he spoke of what he knew—all would have conspired to enkindle the interest which is so necessary for the understanding of the subjects of which he treated. It matters not how he taught, or whether he adopted any peculiar devices. Such a man must make his manners, rather than his manners the man. To know the relation he bore to that of which he spoke, was to grant him the attention he required; and the recollections of students clung not to philosophy alone, but to philosophy as it manifested itself in Sir William Hamilton. And what an impetus and catholicity—still surviving—he gave to the thought of Britain, when, at his touch, the dead recovered life. Under him Scottish philosophy first learned to recognize the existence of certain definite principles, to the determination of which the whims of individuals must be subordinate; and to acknowledge that the whole can be determined and constructed only by an understanding and conjunction of all its parts. All special pleading and local or sectarian exclusiveness must go to the winds. He who would know his own was taught to feel that he must learn another's strength. The Scotchman could not be perfect if he neglected the thought of Germany; nor could German or Scotchman count his positions secure till he had ascertained where the intelligence of France had established itself or striven to establish.*

* "Il n'est pas peut-être en Europe un homme qui possède une connaissance aussi complète et aussi minutieuse, une intelligence aussi profonde, des livres, des systèmes et des philosophes d'Allemagne. L'érudition de M. Hamilton n'est pas cette érudition morte qui s'occupe plus des livres que des idées, et qui étouffe l'esprit philosophe au lieu de le nourrir; c'est une érudition active, qui laisse à la pensée toute son indépendance; elle n'est pas à elle-même sa propre fin, mais seulement un instrument pour la récherche de la vérité. Quoique infiniment variée, car elle embrasse presque tout le champ des sciences morales et ration-

It appears that the reasons for the regret, felt by all who have known him, that Hamilton did not continue the preparation of lectures in subsequent years until he had traversed the whole field of discussion in the manner which his first conception had worked out, are again the fault of that ruling council which had at first declared in his favor by so small a majority. In 1838, he had, at the solicitation of interested and advanced students, entered on a special course of lectures on the highest departments of speculative science, when the authorities interfered to prevent their continuance. Hamilton never outgrew—as such a mind as his could not outgrow—his disposition to be his own master; and it became interesting to his pupils to notice the contrast between the keen dialectic of his controversies and the kindly manner of his addresses to them. It was because he had not consulted them before commencing it that the Town Council objected to the continuance of the special course of 1838; and, as a subsequent attempt to deliver both of the prepared series during the same session led to further dissatisfaction, he was in the habit, during the remainder of the twenty years that he occupied the chair, of delivering them on alternate years. Here was one of the severest penalties that the caprice of a few individuals, significant or insignificant, has ever imposed upon the world. A Prometheus, who would only serve mortals while *bound*, was loosed and bid go useless, because he had not asked Smith and Jones for a rock! Small matter to those who could not begin to enumerate the cost of their victory; small matter, too, to Prometheus himself; great matter to those who, in the twelve hundred pages of his Common-Place Book, read the proof that centuries were beggared by the triumph of an hour.

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nelles, et de la literature générale, elle est en même temps complète et profonde, principalement en philosophie ancienne et moderne, et en matière d'instruction publique. Peu d'hommes en Europe sont aussi familiers avec la philosophie, et en particulier avec Aristote."—*M. Peisse, Préface aux Fragmens de Philosophie, par Sir William Hamilton*, pp. lxxxi., lxxxiii.

The remainder of Hamilton's career was the ordinary one of quiet professional life; his chief literary employment being the publication of his Discussions with notes, of his edition of Reid, and the editorial care of an edition of Stewart. It cannot surprise us that the chairs of speculative philosophy in three of the four Scottish universities are filled by pupils of his, or that all these were among those who were on terms of the greatest intimacy with him during his last years, Baynes of St. Andrews having been his assistant for some time, and Veitch and Fraser favorite pupils. The late Professor Ferrier throughout the night that followed Hamilton's attack of paralysis, in 1844, paced to and fro opposite his window, unwilling to interrupt those that were caring for his wants, and yet loath to leave the neighborhood of his suffering friend; and afterward, until he had so far recovered as to be able to resume his work, met the logic class in his stead and read to them his lectures.

For none of his students, however, does Hamilton appear to have entertained greater respect than for Dr. John Cairns, with whom he corresponded for many years; while with Dr. Whewell and Professor De Morgan he conducted controversies which but served to further reveal the extent of his philosophical stores. These names—all but two of which are still bodily represented—pleasantly connect the present with the past. It must seem to Baynes but a little while since, as a student, he went to Hamilton's house for the first time, to borrow a Commentary on Aristotle. And Frendelenburg is but lately dead, whose edition he then recommended as the best, and of whose spoken opposition to the widely-spread Hegelianism of Germany he used to say that it was as "the voice of one crying in the wilderness." But he who had so often leapt the high walls about Oxford could, after 1844, with difficulty mount the steps leading to his lecture-room. Some thought that the fine proportions of feature and form had gone, and with them the genial temper.

But mental activity did not falter with the loss of physical strength. During the twelve years that intervened between the

warning and the final stroke, he was not less a philosopher than before. A reveller more than a talker, he still could revel; if not, as years before, forgetting the friends with whom he was walking, and for miles returning no reply, then seated in his chair or lying on his sofa. The wider sympathy with humanity, such as is the birthright of most men, may have become the seared hydra of his declining years, and those who engaged him in controversy may have recoiled from the strong blows of his untempered power; but to his family he became dearer than before, while his interest in personal friends remained seemingly unabated. Indeed, the communications he received from them, and the visits, more and more frequent, of those who sought to honor themselves by his acquaintance, became each year a greater gratification to him. His nature, sensitively alive to the opinions of others, and haunted by a dread lest his mental should follow the example of his bodily vigor, was not averse to any chance of comparison which should prove it unimpaired. Nor was this the only respect in which others came gradually to share more largely in his life. Instead of the grotesque caricature on the manuscript's edge that had once relieved the intervals of intense thought (which habit, by the by, he might have caught from Lockhart when both were briefless advocates), there came, at the opportune time, the pleasant remark of his wife —addressing the ear instead of the eye—she meanwhile continuing the writing he had dictated.

All in all, we doubt whether any literary man ever possessed a more serviceable wife than did Hamilton; and, having the good fortune to live for him, she lived for the world. He loved, too, to have his children serve him, and they were on the alert to meet him on his arising in the morning and to carry down stairs for him the books he thought he should need for reference during the day; or to watch until he had established himself for his evening rest, and then to read to him from the weird tales he liked until he had fallen asleep. Thus surrounded, it was not an unpleasant life that he had led; and, though at last he learned to count the days until

the college terms should end, a summer among the hills, which restored to him, in suggestion at least, some of the vigor of his childhood, refreshed him for the coming work. But "the lion-like look," which was said to haunt his face, could not keep death at bay. Like other souls, his was not permitted to linger where it would. Like others, it must hasten to learn what part of the labor of this life is vain. And so it went away—it may have been to inherit such additional senses as permit it to *know* the absolute.

All in all, we are not disappointed as we lay aside his life; it was of heroic mould, yet sternly heroic; for the world he dwelt in was apart from that which most men love. In him, as in others, success and failure strangely jostled one the other. When we think, with him, that the mental strength which results from highest and life-long culture is worth the life that gains it, we feel that he was successful. And if we could know that it resulted in such mental discipline as could end the keen controversy by forgetting it until the time for its renewal—as, in a word, could always and instantly thrust aside the unwelcome by the pleasant thought—still more should we call his life a success, and count the man as in every respect greater than his works. For so would that which was lost to others have been dowered upon himself. Otherwise, the loss to them of all that which, coming from him, might have made them wiser than they were, was so far an imperfection.

ART. III.—1. *The Atmosphere.* By CAMILLE FLAMMARION. Edited by JAMES GLASHIER, F. R. S. New York. 1873.

2. *The Graft Theory of Disease.* By JAMES ROSS, M. D. London. 1872.

3. *Practical Hygiene.* By E. A. PARKES, M. D., F. R. S. Philadelphia. 1873.

IT has been significantly said that man did not live by bread alone, but by every breath (word) that proceeds from the mouth of God. The spiritual interpretation of this affir-

mation contains but half the truth—fully three-fourths of man's bodily sustenance, according to M. Flammarion,* being absorbed from the atmosphere in which he lives. To the uninitiated in nature's chemical mysteries this fact excites incredulous surprise. Such a one often wonders how fishes can live in water, and find enough of what is solid in that medium to elaborate the material fabric of their bodies. A similar wonder is even more manifest by him upon observing the growth and maturation of certain plants entirely isolated from every source of nutrition save that of the air in which they are suspended. In the nutrition of animals and man the wonder of such minds is of less magnitude only because they are observed to eat and appropriate more solid and substantial substances.

As a matter of fact, however, these creatures live no less on air and moisture than do plants and fishes; and it is because our apprehension of the needs and means of animal life is limited and narrow that we fail to perceive the marvellous displayed in fabricating the higher forms of it. While it is easily demonstrable that an adult individual requires for his proper nutrition several pounds of substantial aliment daily, it is commonly overlooked that he draws upon the atmosphere for a larger and more important means of sustenance. But it is true. The atmosphere is in fact a nutritious medium, in which man lives suspended very much like a fish in water, and from which, through millions of microscopic pores, he receives elements in greater variety and profusion, and immensely more potential, than do the amphibious creatures from their native element.

The medium in which man is enveloped is thinner, more sub-

* "Breathing," says M. Flammarion, "affords three-quarters of our nourishment; the other quarter we obtain in the aliment, solid and fluid, in which oxygen, hydrogen, nitrogen, and carbonic acid are the chief component parts. Further, the particles which are at the present moment incorporated in our organism will make their escape, either in perspiration or in the process of breathing; and after having sojourned for a certain time in the atmosphere, will be reincorporated in some other organism, either of plant, animal, or man."—*The Atmosphere*, p. 11.

tle and elastic, than that inhabited by fishes. It does not bear him up; he walks upon *terra firma*, in it and through it, while the other forms of beings referred to swim or float in theirs; and yet, in reality, the atmosphere is no less an ocean, as palpable, and with grander proportions than any aqueous ocean—presenting phenomena of greater variety and beauty, elements in greater profusion and splendor, influences rarer, more profound, and celestial. It is sometimes calmer than any Pacific; at others, rougher than any Atlantic; its storms wilder and more destructive than those of any liquid sea, its waves singing with a force, and with a length, depth, and breadth, as superior to those of water as the atmospheric ocean is broader, deeper, and larger than any aqueous ocean. Staunch ships can ride out a wild sea-storm, but the storms of airy and electrical forces which sometimes occur in the atmospheric envelope shake continents from centre to circumference, wind the ocean into monsoons, uproot forests, remove mountains, and overturn and destroy the most solid and substantial things of earth. So mighty are its airy billows, now and then, that an inspired writer of antiquity has suggested the presence of the great Jehovah in the storm. This is not unnatural. The exercise and manifestation of tremendous forces always impress the observer with the idea of an indwelling Omnipotence. And why should they not? Is not His majesty fittingly represented in the storm-cloud? Does not His voice resound in the peal of thunder and in the roar of the cataract?

While, therefore, the gaseous envelope in which we live is full of beneficent influences, and grand and imposing phenomena, it is also laden with elements and forces of the most malevolent qualities. Good and evil are in fact commingled in the air we breathe in variable proportions and with variable sequences upon animal life. "Life and death" are truly, as M. Flammarion has eloquently said "in the air which we breathe, and perpetually succeed the one to the other by the interchange of gaseous particles."* The intuitions of the

* *The Atmosphere*, p. 11.

ancient poets were, therefore, not altogether misleading when they declared that the air was full of evil spirits; nor are those of some more modern poets who maintain the same idea respecting the existence of good spirits in that medium. Both are right, no doubt, as the microscope has proved, except that the "spirits" revealed by that little instrument, while they are unlike in character, are by no means less numerous, nor less potent for weal and woe than the curious species depicted in the poet's fancy.

If the environment of living creatures have a controlling influence upon their development we are to seek for many of the causes of man's pains and penalties, vices and virtues, etc., in his atmosphere. He is surely no less a creature of air and sunshine than is the fish of water and electricity. Not only are the physical and moral characteristics of races and peoples largely influenced by the quality of the atmosphere in which they live, as Prichard, Buckle, Draper, Lewis, Taine, and others, have demonstrably shown, but the accidents of their physical constitution, health and disease, directly depend on the morbific, meteorological, and other changes which are continually occurring in the surrounding air. We are not unmindful of the logical bearing of this proposition upon doctrines theologic, religious, and ethical, which pass current in the average thought of the day; and if it be inconsistent with them it is surely so through no fault of ours, and the responsibility for which therefore cannot justly be charged to man's account. Be that as it may, our present purpose is to deal with problems more clearly defined and practical; such as come within the undisputed domain of the philosopher and physician, rather than that of the theologian and clergyman.

Ignoring for the present the morbific causes in the atmosphere which are identified with changes, meteorological, thermometrical, barometrical, hygrometrical, etc., and confining our observations exclusively to those of a pathogenitic character, we have to remark that the most prolific source of morbific supply to the air is man himself. According to Mn. Lavissier and Sequin, an adult individual exhales more than

600 cubic inches of carbonic acid gas an hour, and vitiates for human uses more than as many hundred feet of air in the mean time. If this quantity of deadly gas be added to various other gaseous effluvia of a noxious character which are eliminated from his skin during the same interval, and which finds its way to the air, the combined amount will be found to be very considerably increased. Thus much is a necessity of man's organic life in its best estate—health. In disease these products of waste are augmented in amount and variety, both depending somewhat on the nature of the morbific disturbance—disease. Moreover, the supply of morbific matter to the air, engendered by the arts and industries incident to the household and manufactories, is of vast proportions.

These are, indeed, well-nigh exhaustless sources of atmospheric impurity. Wherever there is combustion and decomposition—and decomposition is but a slow form of combustion—there are elements given to the air which are inimical to animal life. Hence artificial light—the combustion of candles, oils, and carburetted gas—is a prolific source of impurity, large quantities of carbonic acid being given thereby to the air.* The ordinary heating stove is, likewise, another source of supply of this gas, as the many fatal accidents, which are due to its escape from stoves in close bed-rooms, amply testify. To these household sources of poison-supply must also be added personal uncleanliness; the fumes of slops, drains, sewers, and sinks; the exhalations of kitchen garbage; and the elements of decomposition of vegetables, fruits, and other accumulations of the cellar, store-room, kitchen, etc.

But outside of the household the sources of impurity are too numerous for enumeration. They embrace the exhalations of slaughter-houses and markets, the noisome accumulations of the streets and gutters, stables, pig-styes, and out-houses, foundries and factories, blast-furnaces, flouring, paper, and other mills; establishments for bone-boiling, soap-making,

* Two lighted wax candles consume an amount of oxygen equal to that consumed by an adult, and give out to the air, of course, just the same quantity of carbon gas that he does, in equal times, by respiration.

paint-manufacturing, and the numberless other arts and industries of civilized life.

Atmospheric impurity from these elements, however, is of little importance compared to that which arises from ordinary combustion—oxidation. The amount of carbonic acid which the atmosphere receives from that process is incalculable; and if it were not for the supplemental and counteracting influence of the vegetable kingdom, animal life would soon be extinguished by it.* Attempts have recently been essayed by some European physicists to ascertain approximately the amount of carbon eliminated by the combustion of fuel in certain manufacturing towns. Dr. Angus Smith has calculated that at Manchester, England, fifteen thousand tons daily of that gas are discharged into the air!

Moreover, in the dissolution of the animal kingdom—in that mysterious process by which dust returns to dust—the atmosphere receives a supply of carbon gas by no means small. In and around cemeteries and grave-yards, as one would naturally presume, the presence of that gas has been found in large excess. Dr. Parkes observes that, "The decomposition of (human) bodies gives rise to a very large amount of carbonic acid. It has been calculated that, when intramural burial was carried on in London, two and a-half millions of cubic feet of carbonic acid were disengaged annually from the 52,000 bodies there buried. Ammonia and an offensive vapor are also given off. The air of most

* "We know," says Mr. Hunt, "that all the carbon which forms the masses of the magnificent trees of the forest, and of the herbs of the fields, has been supplied from the atmosphere, to which it has been given by the functions of animal life, and the necessities of animal existence. * * * The vegetable kingdom, however, drinks this noxious air; it appropriates one of the elements of this gas—carbon—and the other—oxygen—is liberated again to perform its services to the animal world. * * * If the vegetable world was swept away, animal life would soon become extinct; and if all animal existence was brought to a close, the forest would fall, and the flowers of the field which now clothe the earth with gladness, perish in the utterness of a lamentable decay."—*Researches on Light*, pp. 244, 245.

cemeteries is richer in carbonic acid (7 to 9 per 1,000, Ramon da Luna), and the organic matter is perceptibly large when tested by potassium permanganate.* But how small must be even these supplies of carbon acid from such sources, compared to that of the vegetable kingdom, which, by its annual decay, leaves behind immeasurable quantities of it, besides other volatile elements equally inimical to animal life! If to these exhaustless sources of carbon-poison be added the amount of it thrown out by animal respiration, some just idea of the danger of its undue accumulation may readily be conceived.†

Another compromising element in the air is watery vapor. The atmosphere requires a certain amount of moisture to fit it for the uses of organic life. Air of too dry a character is irritating to the physical system, and especially so to the exposed mucous membrane, and tends to inflame it. But an excess of moisture is still worse. We have all felt the oppression of a moist, hot day. We have often heard people remark of such days that they were "so debilitating;" "there is no life in the air, etc." They knew not how to explain the effects. But the explanation is easy enough. There is surely not appreciably less oxygen in the air in such weather.‡ The air is not dead, although there is less sun-

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* *Practical Hygiene*, p. 104.

† It is interesting to bear in mind "that the combustion of one cubic foot of coal gas consumes the oxygen of ten cubic feet of air, and produces two cubic feet of carbonic acid. The combustion of a pound of oil consumes the oxygen of one hundred and thirty cubic feet of air, and produces about twenty-one cubic feet of carbonic acid. A person, by breathing, adds one per cent. of carbonic acid to fifty-five and a half cubic feet of air in an hour, which would vitiate to this extent one foot per minute, while this effect is much increased by the surface exhalations. These facts show the rapidity with which the breathing medium of inhabited apartments tends to become deteriorated."—Huxley & Youman's *Physiology and Hygiene*, p. 284.

‡ In the London air, in the open spaces, the oxygen amounted to 20.95; in the crowded Eastern districts to 20.857. In a foggy frost, in Manchester, when the smoke was not moving much, the amount

shine diffused through it. It is simply overcharged with watery vapor; and it can not, for that reason, receive the vapor of the body with sufficient alacrity for the convenience and comfort of the living system. Hence the vital processes are oppressed. The respiration is overburdened with a load of moisture and carbonic acid. The cutaneous transpiration is also affected in a similar manner, and for the same reason; the organic functions are generally oppressed, and debility and languor inevitably follow. We thus see why a person can bear a degree of heat in a dry atmosphere that would be extremely uncomfortable, if not immediately fatal, in one highly saturated with moisture. A dry atmosphere promotes cutaneous transpiration; a moist atmosphere represses it. One clogs and depresses; the other enlivens and reanimates.

It is hardly necessary to enlarge upon the subject of the fetid exhalations of the sick as a source of organic impurity to the air, and of disorder to those who breathe them. The belief in the Germ Theory of contagious disease, which is fast becoming a popular one, has, in the morbific effects of such exhalations, a most plausible basis to rest upon. These morbific germs, or organisms, are generated within the body and exhaled in the secretions of persons afflicted with certain diseases, and thus find their way into the atmosphere to be blown by the wind whither it listeth, to germinate and reproduce their kind. In respect of the nature of the contagion of contagious fevers, it matters not whether we accept the Graft Theory, defended by Dr. Ross and others, or its favorite rival, the Germ Theory, so warmly espoused by Professor Tyndall. The *effects* of the morbific elements are by no means hypothetical. The secretions of sick people, whatever be their nature, are always unwholesome, even when not infectious; and they impregnate the air with their own peculiar qualities and morbific powers. The aromas—not to use a harder term

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was 20.91. In Glasgow the average was 20.9092. "The variations" of oxygen in the air, says Dr. Parkes, "are, therefore, within narrow limits."—*Practical Hygiene*, p. 105. 4th ed.

—of certain fevers are so characteristic that an experienced physician, or nurse, can frequently detect the nature of the disease by the odor of the air of the room in which it is confined. This is particularly the case in bilious and rheumatic fevers, influenza, measles, typhus, uræmia, etc.

Moreover, many people exhale peculiar vitiating odors in ordinary health. These are so characteristic often, that the presence of those afflicted with them may be detected by the sense of smell alone. Then there is the strong, rank, African odor, not uncommon to individuals of the lighter-colored race; the fetid odors of ichrosis and osmidrosis, and the sulphureous odors peculiar to many others, any one of which is sufficient to affect morbificly the air of an apartment in which its subject is confined.

In sick-rooms fever exhalations have been found to exist in appreciable quantities. Moscatti, an Italian physician, is said to have condensed the watery vapor of a hospital-ward at Milan, and found it to be "slimy, and having a marshy smell." "The dust of a ward in St. Louis, Paris, was discovered by Chalvert to contain, in one experiment, 36 per cent. and in another, 46 per cent. of organic matter, which consisted chiefly of epithelium, and when burnt gave an odor of horn. Pus-cells have been discovered in the air of an ophthalmic ward, and epithelium cells are found in that of all ill-ventilated rooms.* Indeed, there is no end to this field of discovery if one were disposed to work it. The atmosphere, like a great sponge envelope, absorbs every thing noxious or otherwise with which it comes in contact. This is good for the patient, surely, but bad for the air! The fact gives one ample justification for insisting upon thorough disinfection, and the freest, fullest ventilation in the private dwelling and sick-chamber, as well as in the wards of hospitals, schools, churches, and other places where human beings congregate.

There are other evils in the atmosphere, moreover, more subtle than any of those yet mentioned, which play an im-

* Huxley and Youman's "*Phys. and Hygiene*," p. 286.

portant part in the rôle of morbific causes. If a ray of light be permitted to enter through a small opening into a shaded room, no matter how clean and tidy that apartment may be, the air of it will be found to be loaded with all manner of dust and organic debris, much of which is clearly visible to the naked eye. If some of this dust be illuminated on the object glass of a microscope, it will be found to consist of organic and inorganic particles, and many low forms of vegetable and animal life. In fact, the purest atmosphere of which we have any knowledge abounds with powdered rock, iron, silica, marble, the husks of cereals, and the fibres of wood, cotton, hair, wool, etc. Starch grains, also, are present in great profusion. Scarcely an element or product of material nature is unrepresented in the thin, elastic medium which we daily breathe. There are, also, the gases which no microscopic glass reveals, and which are known only by their power to choke us; the aromas, invisible to the eye, but which are strangely manifest to the olfactory sense. Then, there are the various miasmas and parasitic forces invisible for the most part, which, in many localities, fill the air with deadly infection.

Some of these miasmas, notably that of ague and fever, are said to have been ingeniously entrapped and found to consist of fungi, the baleful products of vegetable decomposition. Moreover, the air is frequently infected with elements more deadily than the agents of miasmatic fever; elements which no eye hath seen, and which have yielded to no test, save that of the sensitive perceptions of the vital powers. Aside from the presence of vegetable parasites, little sexless creatures of the order cryptogamia, neither vegetable nor animal, but partaking of the nature of both, and which multiply under favorable conditions with amazing rapidity, there are animal sporules, the product of animal putrefaction, which charge the air with the agents of pestilence and death, and are the presumable source of contagious and infectious diseases. They are too subtle for the analysis of chemical re-agents, the spectroscopic or microscopic tests, and are only certainly known

to us from the effects which their absorption into the blood produces; these being known as cholera, pyæmia, septicæmia, the contagious fevers, erysipelas, "yellow jack," etc.

These peculiar germs of disease are multiplied indefinitely within the living economy; the poisonous animalculæ being exhaled in the breath, in the vapors of the body, and in all the excretions of people afflicted with those diseases. Some idea of the mischievous potency of these impalpable fever-germs may be conceived when one reflects that a single breath of air from a room infected with them is sufficient to incite the gravest disease in a person susceptible to their influence. In the case of cholera, M. Delfuysse of the French Academy, claims to have detected the cholera germs in the exhalations of people sick with that disease, and to have demonstrated their animalculæ nature. Be that as it may, the sanitary developments of modern times have clearly established the fact that the infection of cholera exists in the exhalations of those who are afflicted with it, and that if these be duly disinfected—destroyed—the propagation of the disease is surely prevented.

Then, again, innumerable insects, and still more innumerable germs of insects, infest the air, particularly in tropical latitudes, and the warm seasons of temperate latitudes. Many of these are visible to the unaided eye; many more are too small, probably, to be revealed by the most powerful magnifying glass. M. Ponchet maintains that there are "one hundred different species of nicrozoaires, the eggs of which are floating in the air to the extent of 200,000,000 per cubic foot!" These germs of life are probably for the most part innocuous, however objectionable they may be considered to lovers of pure, *fresh* air. If M. Ponchet's statement be exaggerated 50 per cent. there will still be good grounds to regard the atmosphere as a *nutritious* medium of the most substantial sort. The hourly consumption by man of a few hundred millions of these eggs must, surely, be of some account in the nutritive economy of human life!

These elements, noxious and otherwise, of the air, are present in different proportion, in different localities, seasons,

and latitudes. In cities the products of animal decomposition are far more prevalent in the atmosphere than they are in the country; while in the latter the miasmata are naturally more prevalent. The air in manufacturing and mining towns, on the other hand, is overcharged with gases of most deadly properties, the carbonic acid, sulphureous, carburetted, ammoniacal gases, etc.; smoke, watery vapor, and the dust arising from powdered coal and numerous other inorganic substances, the products of the wear and tear of industrial life. The air of the tropics is more largely impregnated with watery vapor, the organic gases, the products of vegetable and animal decomposition, and the countless orders of insects, with their still more countless ova, whose presence is invisible except when in the focus of a powerful microscope.

Some experiments of Dr. Sigerson on the quality of air in diferent localities were communicated to the Dublin Royal Historical Society by that gentleman, not long since, which are possessed of much physiological interest in this connection. "In air from an iron factory," he found, on examination, "carbon, ash, and iron; the latter substance was in the form of little hollow balls, each about two-thousandth of an inch in diameter, the iron being so thin that the light passed through it. In shirt-factory air were found filaments of linen and cotton. Antimony—from the type metal, probably—was discovered in the air of printing-rooms. Stable air was ascertained to contain floating hair and scales; and, in the air through which tobacco smoke was passing, nicotine, the poison of tobacco, appeared in little globules." From these experiments one can easily conjecture what the quality of air would be over grave-yards and vaults, filthy streets and gutters, in closed bed-rooms, the unventilated wards of hospitals, the sick-room of a person suffering from diarrhœa, dysentery, cholera morbus, or typhus. It is said that "Dew collected over rice-fields often contains so much decomposing organic matter as to become putrid after standing for a short time. Exposure to the night air of these localities, in the hot season, invariably produces, in the Caucasian race, malignant and almost incurable

fevers."* The invalid, therefore, who changes his northern home to escape the chilling temperature of a northern winter, finds in the atmosphere of the South, it may be, an enemy far more destructive to his bodily constitution than the low temperature and fitful, thermic changes of a New England winter.

That the atmosphere in its purest condition is numerously inhabited by living organisms seems to be demonstrated beyond all rational dispute. The labors of Redi in the seventeenth century, Spallanzani in the eighteenth, and Schevann, Schultze, Helmholtz, Ponchet, Cohn, Sanderson, Huxley, and others, in the nineteenth, have long since placed the subject beyond rational controversy; but it remained for M. Pasteur, the eminent French microscopist, in a series of brilliant experiments, in 1862, to ascertain the proportion in which they were present in the air.

The experiments of M. Pasteur have been followed up by others both in England and on the Continent with remarkable conformation. The number of these organisms which Dr. Angus Smith and Mr. Dancer of England claim as mostly recognizable in twenty-five hundred litres of Manchester air, by no means the worst in England, they estimate as high as thirty-seven and a half millions, or about seventy-five thousand of the little creatures to one gallon of air! This proportion is very variable, depending upon the seasons, the purity of the air, and the distance from the earth and the abodes of organic life. M. Pasteur found their presence in a maximum proportion at the sea-level, and growing less and less in proportion as he advanced in elevation. Thus at Montanvert, near the Mer. de Glace, at an elevation of two thousand metres, a minimum of the organisms was discoverable.† The number found in an atmosphere of average purity, by Messrs. Smith and Dancer, is much less than that estimated by M. Ponchet already quoted. But it will do!

* Well's Chemistry, p. 225.

† Vide *Quar. Jour. Science*, No. xxxviii., p. 282.

The purest and the freshest air, then, which Nature has provided for her breathing creatures, is at best largely impregnated, with elements inimical to the life and health of sentient beings. Every inhalation is accompanied with a multitude of things animate and inanimate, crude and impalpable, active and inert, which enter the lungs and through them find free, unobstructed access to the circulation, and through this, to the heart and brain, inciting a warfare of disease and conservation in that medium, which can only end with their elimination or the final decadence of the animal powers. Surely no housewife finds greater difficulty in keeping her house pure and sweet than does Nature in guarding the life-blood from the intrusion of dirt, fungi, and other foreign elements, and ridding it of them when once they have invaded that life-giving fluid. If all mankind knew how impure is the purest air, and how inexpressibly vile is foul air, the number who now "croak" for pure air and free ventilation—for open windows and exposed fire-places—would be largely increased; and the community would enjoy, in consequence, greater immunity from those disorders which now put the majority of mankind into little coffins and narrow graves.

What countless morbific agencies therefore impregnate the atmosphere, unseen by the naked eye, and unappreciated by the unaided sense! Many of them are too diminutive for the microscope, or even to be estimated by the mathematical powers of the human mind; a world of infinity within the finite, which man can never fully explore, but of whose existence he is compelled to infer. The logic of the known, here, as elsewhere, inevitably impels him to advance to the unknown and to the unknowable!

Having thus but barely entered this part of our subject, we pass to the consideration of a few of the most prominent and noticeable effects of morbific air upon the functions of human life.

We think it may be safely affirmed that every endemic fever owes its existence mainly to impurities in the air in which the victims live or try to live. If one examine those

admirable sanitary maps which usually accompany the annual health reports of New York, Boston, London, and other cities, he will find ample confirmation of this assertion.

Where there are a dense population and crowded tenants, there lurk the horrid skeletons of pestilence and death. Some mistaken poet hath said that "death loves a shining mark!" The observation of the physician does not support the imagination of the poet. The records of the health department show conclusively that death prefers dark spots, shaded marks; his choicest victims being those unwashed creatures who inhabit unlighted and foul-air abodes. It is curious to observe that, when cholera "arrives" in New York, he invariably seeks out for his first victim some poor, wretched starveling, the miserable occupant of some filthy tenement-house in the foulest part of the city! And when yellow fever "comes," instead of putting up in first-class quarters, he selects the worst, in which to begin the harvest of death.

Such abodes are always, the head-quarters of all the distinguished pestilential guests,[1] as well as of those of the obscurer sort, and the centre from which their attacks upon more wholesome districts are made. Hence we see in this fact how vitally the improvement of the surroundings of the lower classes concerns the interests of the higher, or more well-to-do.

Small-pox is, likewise, a habitat of foul-air abodes. Foul air generates it in the beginning, and foul air propagates it in the end. The districts where it prevails are always those of the worst and dirtiest in the city. The worst phases of the disease are to be found there, and only by exception anywhere else. Every physician will tell us that second basement cases are the most malignant and the most numerous of any with which he has to deal. Its fatality is almost wholly confined to those who live in filth and breathe morbific air.

With no desire to discourage vaccination when judiciously performed, still we must affirm that a pure, sweet home is a more effective prophylaxis of the disease. If the poor had

this they could safely dispense with the barbaric expedient of vaccination. Indeed, we are not sure but that the vaccination fee spent for soap and whitewash would be a more profitable investment, even as things now are. Vaccination is one of those abominable time-serving expedients which practical-minded geniuses sometimes succeed in fastening upon the medical profession and the common mind. The medical profession is literally loaded down with them to-day; and it would redound to its glory and to the lasting advantage of mankind if it would imitate the wisdom of the theological profession, and throw some of them overboard. On this point, however, opinions differ.

Measles, scarlet fever, and typhus, are foul-air products. They could not be bred in sweet homes and pure environments. They are all both a cause and a sequence of impure air. Being at first propagated by filth, they in turn poison the air with their own infection, and spread their peculiar seed-germs of disease far and wide, to take root and develop characteristic effects whenever a favorable *nidus* is found to receive them.

Diphtheria is likewise a disease of foul-air origin. Whether it occur endemically in thickly-settled and over-populated districts; or in the miserable tenements of the poorer classes; or in low, filthy localities near the terminus of sewers, or the dumping-ground of city offal; or from leaky drains and untrapped waste-pipes; or from the noxious ebullitions of stationary wash-basins, wash-tubs, sinks, and in-door water-closets; or the noisome exhalations of confined rubbish in sub-cellars, the cause is one and the same, namely, foul air. Whenever the malady occurs in salubrious localities the cause is to be sought within the confines of the household, and suggests the propriety of putting that "sacred" domain of the individual in wholesome order.

In this general summary of the morbific effects of impure air, we must not overlook scrofula and consumption. Bandologue, an eminent French physician, affirms, "'that the repeated respiration of the same atmosphere is a primary and efficient

cause of scrofula,' and that, 'if there be entirely pure air, there may be bad food, bad clothing, and want of personal cleanliness, but that scrofulous diseases cannot exist.' Again, he says: 'Invariably, it will be found on examination that a truly scrofulous disease is caused by a vitiated air; and it is not always necessary that there should have been a prolonged stay in such an atmosphere. Often a few hours each day is sufficient; and it is thus that persons may live in the most healthy country, pass the greater part of the day in the open air, and yet become scrofulous, because of sleeping in a confined place where the air has not been renewed.'"* Dr. Bandologue's observations have been confirmed by many credible writers, among others the eminent physicist, the late Dr. Neil Arnott, of England. Dr. Black, in The London Lancet, argues that impure air is more prolific of cardiac disease than is any other cause. "In thousands of instances of cardiac disease life is thus sacrificed, when, if the proper ventilation of the bedrooms had been observed, the subjects of such disease might, despite the cardiac mischief, have continued to live for an indefinite time." But what is true of cardiac disease is equally true of phthisis and every other form of scrofulous disease.

No part of the animal economy is, in fact, so likely to be compromised by poisons in the air as the lungs. The health, strength, and integrity of those delicate organs are directly dependent upon pure solarized air. The condition of the lungs and the quality of the air is so intimate, the reciprocity is so complete, that a popular medical writer maintains that atmospheric air is the natural food of the lungs. While one may justly question the soundness of that hypothesis, he cannot doubt the intimate sympathy which exists between them and the air, and for reasons quite obvious to any one: the noxious properties of the air producing irritation and disease of the sensitive mucous membrane which lines the air-cells and tubes of those organs, besides corrupting the fountain whence comes all growth and

* Cited by Huxley and Youmans.—*Physiology and Hygiene*, p. 288.

nutrition—the blood. These effects are manifest in the densely inhabited portions of large cities. They are found in the habitations of the poor, indigent, and ignorant everywhere. One cannot mistake them. These victims of foul air have an earthy, haggard complexion; the breath is offensive; nutrition defective; the lips have lost the vermilion tint; the cheeks are collapsed and the cheek-bones elevated; the form is wasted; the chest is sunken, and the shoulders stooping. There is a dry, hollow cough and shortness of breath which suggest dismal forebodings of that grim horror, death!

According to Dr. MacCormac, "induced consumption has its origin in rebreathing expired air. Persons of a delicate constitution, or organization, should," he says, "sleep alone, and, if possible, in spacious rooms, thus insuring a larger supply of pure, uncontaminated air; and the window-sash should also invariably be slightly raised on retiring. When the dormitory is small, if not carefully ventilated, oxygen, the essential element that supports life, is quickly exhausted, and the individual takes back into the lungs carbonic-acid gas, which is so destructive of life—the whole system becoming deranged, the air-cells ulcerating, and, with the destruction of these, the whole bronchial region falling into disease."

Then there are scorbutic affections. The depravity of the blood shows itself in disease of the skin—pustules, abscesses, suppurations, tumors, enlarged glands, fungoid growths, exortoses, excrescences, cams, etc. The flesh of such people is unhealthy; slight wounds run into unhealthy suppuration, and are difficult to heal. Their blood is inflammable, and kindles rapidly into malignant fever upon the slightest incitement or provocation.

Moreover, upon the mind, the morbific effects of foul air are, if possible, still more pronounced. Indeed, the mind is the first to suffer from unwholesome surroundings, as it is more sensitive to impressions of every kind than is the lower physical powers. These depressing effects are likewise more manifest in proportion to the cerebral development. The student, or one who uses his higher mental faculties largely,

finds frequent and painful confirmation of this great fact in his daily life and habit. A few hours' ride in the foul, stifling air of a railroad car, or an hour in an unventilated church, a brief stay in the confined air of the school-room, a night in a close, unventilated bed-room, or a few hours' stay in a sick-room, arrests the activity of the higher faculties, clogs reason and sentiment, and extinguishes inspiration completely. It is chiefly because this is so that the student so often becomes a recluse, shuts himself away from society, and the operation of those noisome causes which he knows disturb cerebration and break up the pleasant flow and procession of ideas. His vulgar and less sensitive neighbor calls him nervous, self-conscious, crotchety, and many other names not strictly complimentary, and which strongly savor of contempt. Perhaps he deserves them, and perhaps not. One thing is certain: without this kind of self-circumspection and inexorable seclusion from disturbing causes, physics would never have known a Newton or a Young; chemistry a Cavendish; metaphysics a Spinoza or a Kant; literature a Southey or a Hawthorne.

The most common impurity with which the air of apartments where people congregate becomes impregnated is, as we have seen, carbonic-acid gas. The presence of this gas in inordinate proportion may be immediately known by its soporific effect upon the mental functions. It produces languor, stupor, and sleepiness. The mind loses its power of acuteness, memory, and insight. In a close stove-room, where the gas is presumably present, the occupants can not read long without becoming sleepy. In church, even when the speaking is not doctrinally prosy, the most interested listeners sometimes find it extremely difficult to keep from nodding, from the same cause. Snoring is, therefore, a very common concomitant of divine service in unventilated chapels. An American medical writer has very justly observed that, "In a school, or hospital, or other considerable assemblages of people, the purity of the air may be pretty accurately measured by the amount of cheerfulness, activity, and lively

interest which pervade it; and yet so little do people think or care about this subject that, under existing arrangements, there are very few who do not every day of their lives inspire more or less highly vitiated air. The listlessness and stupidity of students, and especially of children confined in the school-room, are often due to the bad state of the air they breathe. Using the brain in a vitiated atmosphere is like working with a blunted instrument, and the effect, of course, must be aggravated when the inexperienced are first learning the use of the instrument." *

The necessity of pure air to mortals who have sentient functions to regulate is too obvious for serious argument. It is only in an atmospheric environment free from morbific elements that man can secure exemption from the danger of being "possessed" by evils which undermine the mental health and impair the "temple" of the living soul. Whether he shall be thus favored is a question which a wise Providence has largely left to his own free election. God has kindly given him brains, with a few notable exceptions, sufficient, if diligent use be made of them, to devise ways and means for the attainment of this end. The grandest palace, in the absence of these desiderata, becomes a pest-house, and the merest hovel, with them, a place of good health and wholesome enjoyment, if not of luxurious ease and comfort.

This brings us to the subject of ventilation, which has strongly agitated the public mind since the dawn of modern architecture, the object of which is to supply the abodes of human beings with a change of air. The perfection of ventilation can only be approximately attained when the breathing animal is supplied with fresh air at every inspiration, the old, respired air being removed beyond the possibility of being breathed over again. In the open atmosphere Nature's arrangement for this purpose is singularly complete in all its parts. The warm, respired air, as it leaves the lungs, being lighter than the cold air of the outside world, ascends,

* Ray's *Mental Hygiene.*

and is immediately replaced in all needful abundance by the latter, the ceaseless movement of the atmosphere maintaining the process with the strictest regularity, and the most beautiful result. It is interesting to observe how complete and comprehensive are the Creator's means and methods of giving to all nature, in its wild, simple state, an incessant change of air! The atmosphere is in constant motion. The breath that kisses the flower at this instant passes on to be followed by a fresher one the next. The fields are ever swept by a never returning breeze. The animals upon the earth are incessantly administered unto by pure, fresh breezes. The birds in the air, likewise, find fresh, vitalizing currents of oxygen at every turn. Indeed, Nature is no respecter of persons or things in this respect, when her arrangements are not obstructed, and her designs defeated by the miserable short-sight of that greatest of all egotists, man. Man, and the servants whom he controls, are the only creatures in God's universe—so far as we know—who obstruct the beneficent influences of the gentle zephyrs, and defeat the benevolent design indicated in the necessity of a change of air!

The first requisite of ventilation, be it observed, is cleanliness. Without this virtue, the means of ventilation, however perfect, are of no account—indeed, ventilation is impossible without it. Clean bodies, clean clothes, clean rooms, clean halls, unobstructed sinks and drains, copious supplies of pure water, clean streets, clean yards and out-houses, and pure air and bright sunshine, are all indispensable to proper ventilation. How true are the words of the Koran that "Cleanliness is akin to Godliness!"

Some of our carpeted apartments are so dusty that a rapid change of air over their surface would render them untenantable. If people will continue to use carpets, and old, worn-out ones at that, there is no use talking about ventilation to them. And yet there are plenty of poor people that buy old carpets, because they can get them cheap! Such rags are dear at any price, and an imposition upon the

ignorant poor. We have known frequent instances of these coveted articles being sold for second-hand use, that had been in daily use for twenty years, less or more! What a prey are ignorance and apishness to imposition and rapacity! If one could know just how foul an old carpet is, he would be horrified beyond expression to have it under his feet! There is little foul and unclean in the air around, or the earth beneath, that may not be concealed within its fibres! It is unfortunate for the health and comfort of those who live much in-doors to be compelled to inhale at every breath the innumerable forms of dust and disease-producing infusoria that gather in the meshes of carpets, and thence escape into the air of the apartment.

But, as serious as this evil is to those who have good lungs and would make good use of them, it is greatly aggravated by the prevalent custom of sweeping and dusting the household. Every good house-keeper believes it her sacred duty to sweep and dust her rooms at least once a week. To us that is the most dreaded day of the whole seven. The process of sweeping eliminates from the carpets the powdered and filthy accumulations of months, perhaps years, and projects them into the atmosphere of the room, and thence to the lungs of its occupants. The air of an apartment, on such occasions, has the appearance of a dense fog, with a difference in favor of the fog! By-and-by this cloud of dust subsides, settles down upon the furniture, from which it is dusted again into the air, and sooner or later finds its level on the carpet where it was before; only with this difference that, whereas before it was held in the meshes of the carpet, now it is spread loosely over its surface, to be lifted into the air at every step, jar, movement, or passing wind-current, whence it is inhaled into the air-passages to find its way into the blood and brain.

The remedy we have to suggest for this evil would, if thoroughly applied, effectually destroy the trade in brooms and dusters—and nearly that in tapestry and upholstery. The dust from the floors and furniture of our homes should be carefully wiped up with a dampened cloth, or chamois. For

carpets and floors we suggest the use of rollers of dampened sponge. The rollers could easily be cleansed in water after each using. It is a wonder that some enterprising yankee does not act upon this suggestion and make his fortune in an invention of the kind! The patent sweeper is an improvement upon the broom; but it does not fully remedy the evil complained of.

We cannot too earnestly urge the importance of cleanliness in the household as auxiliary and supplemental to proper ventilation, and as a prophylaxis to those "accidents" which so frequently occur to the little members of the family and household, and which give a color of plausibility to the statement of Menander, that

"Whom the gods love die young."

The hands of the gods lay lightly on those who diligently use their faculties in ascertaining and applying the conditions indispensable to the production and maintenance of the highest power of life and health. In general, it is the dirty, idiotic, deformed and infirm members of the race that die young, and the best favored of the gods that reach honorable old age, Menander and Plutarch to the contrary notwithstanding.* To suppose that the gods have any special affection for the former classes, and attest it by prematurely (?) taking them off is too obvious a burlesque on infinite love and wisdom to deceive us for a moment. The statement of the ancient poet may be very fine as a sentiment, but, unhappily, the finest sentiment is more likely than not to be opposed to the dictates of the most ordinary sense.

Returning to our main subject, we remark that, in view of the facts clearly demonstrable relative to the conditions and exigencies of organic life, it is impossible to be insensible to the importance of a rapid renewal of the air in our private apartments, the sick-room, wards of hospitals, school-rooms, churches, and other places of public assembly. Grassi and others maintain that a man requires at least twenty-one hun-

* *Vide* Plutarch's "*Consolatives to Apollonius*," Morals, i., p. 384.

dred cubic feet of fresh air an hour in order to secure him against the effects of an undue accumulation of carbonic-acid gas, the proportion of the gas admissible in a habitable apartment being from .03 to .06 per cent. by volume of the air. Dr. Parkes, who has given much attention to the subject of ventilation, more especially in hospitals, says: "I have measured the air passing out of barracks and hospital-wards, and found that, when twelve hundred or fourteen hundred cubic feet per head per hour only were given, the carbonic acid reached .7 .8 or .9 per one thousand volumes, and that more than two thousand cubic feet were necessary to keep the air pure to the senses."* The observations of De Chaumont, Grassi, and Morin, "fail to agree in this respect," he says. In a ward in the London Fever Hospital, Dr. Sanky found, by careful experiment, that eight hundred cubic feet per hour for each person were insufficient to keep the air sweet. The experiments of French observers lead to the same conclusion. In providing ventilation for the hospital Lariboisiere, in 1856, means were adopted at considerable expense to provide fourteen hundred cubic feet of fresh air per hour for each person with results entirely unsatisfactory. A series of experiments, carefully conducted, demonstrated that a hospital-ward required five thousand two hundred and fifty cubic feet of air per hour for each adult. The hourly change of this very large amount of air could easily be effected, in the opinion of Pettenkofer, "by difference of temperature or mechanical currents, the extent being dependent upon the size of the openings, crevices of windows, doors, etc." The investigations instituted by that eminent observer "showed that with a difference of thirty-four degrees between the external and internal air of a room of eighteen hundred and ninety-five cubic feet capacity, the air was entirely renewed in one hour, and more rapidly with increased difference of temperature.†

The supply of pure air in the homes, urban high-

* *Practical Hygiene*, p. 136, fourth edition.

† *Vide* an interesting paper on this subject in *Harper's Magazine*, October, 1873.

ways, and public buildings of mortals, is a subject for sanitary science to deal with; and we are happy to see physicians forgetting their elegant formulæ and cure-all specifics for the nobler purpose of settling the practical problems which it involves. These comprehend the science of ventilation, the details of which the limits of this paper forbid us to consider. We will only remark that the subject of ventilation has perplexed the brains of architects and medical *savans* since the time when science first revealed to poor plodding mortals its necessity. It seems, however, to be little nearer solution to-day than it was in the beginning. The ends to be achieved are evident enough to an intelligent ape; the means of effecting those ends have thus far defied the ingenuity of his most intelligent and accomplished descendant of the nineteenth century. Perhaps it is not too much to hope that the time is drawing near when some practical-minded genius will discover the means of uniting the practical with the ideal on this subject; so that man may possess the genial comforts of a home, or the pleasure of a social entertainment, without, at the same time, being deprived of the beneficence of those "solar showers" about which Steinmetz has written so eloquently, nor isolated altogether from the free, fresh air of heaven.

Finally, we repeat that ventilation is a modern idea. Our grandfathers and grandmothers neither knew, desired, nor needed to know any thing on the subject. And why should they? Their immense, open fire-places, with the back-log fire in winter, obviated the necessity of taking thought about a fresh-air supply. Moreover, the function of respiration was unknown until the growth of modern chemistry but a century since. Meanwhile, man had been taught by a mistaken moral philosophy to despise his dependence upon Nature, and even now, in many circles, loudly vaunts his independence of material environments. Such is the force of education and native conceit, the long inculcation of the fallacious doctrines concerning his mystical origin, and the means of attaining his still more mystical destiny! One would suppose that a few hours of quiet reflection would be sufficient to convince any

thinking individual that he is as much a creature of environment as the lord of the deep, the king of the forest, or of the air, and as dependent on Nature for his characteristics as the tint of the flower on the sunbeam, the growth of the leaf on carbonic acid, or the grasses that wave in the fields on light and moisture in the atmosphere. And him, who is devoid of reflection, the experience of pain and sorrow ought to bring to the same conclusion respecting his own dependence. And, surely, the pangs of bodily disease are not without a kindly beneficence when they inculcate the great truth of man's dependence on, and subjection to, powers superior to his own. He who has had a pneumonia, or a pleurisy, been arrested by gout, lumbago, arthritis, or palsy, choked with carbonic acid, or stricken with pestilence or paralysis, is easily persuaded to abdicate the self-assumed title of "lord of creation," and is content to be regarded as not only a little, but considerably lower than the angels, if not wholly as a "servant of Nature," willing to learn of her in all humility, and to modestly conform to such conditions and requirements of life and health as she may have wisely imposed upon him, until he recovers, at least. The dying monarch, who had ostentatiously affected to despise life and its providences, found at last a kingdom too small a price to pay for a breath of air. But it could not be had on any terms. So there comes a time in the life of us all when the lesson of physical humility, which we fail to learn by reflection and philosophy, is taught us by the inexorable necessities of pain, privation, and death.

ART. IV.—*History of the United States, from the Discovery of the American Continent.* By GEORGE BANCROFT. Vol. x., 8vo., pp. 593. Boston: Little, Brown & Co. 1874.

WHEN the first volume of this work appeared, in the year 1834, the "appreciative" reviewers, no doubt, anticipated that it might be some years before they would be called upon to eulogise the completed work; but, had any person at that time ventured to prophesy that the lapse of forty years would find the History, not only unfinished, but barely reaching

the point at which the United States commenced its existence as an independent nation, the suggestion would probably have been scouted as preposterous. Yet here, in the year 1874, are we confronted with a tenth volume, which brings us no further than the recognition of American Independence at the close of the Revolution. Although the author has dropped from the title-page of the present volume the words "to the present time," which figured on those of the earlier issues, it is nowhere intimated that this is to be the conclusion. It, therefore, seems probable that the task of reviewing the History as a whole is to be reserved for future generations.

That the history of a single nation, and that one of the youngest on the globe, should have already increased to such enormous proportions, appears at first incomprehensible; but, on the perusal of the performance before us, the mystery is explained. Mr. Bancroft possesses two qualities which in a historian are, to say the least, remarkable: Of these the first is a tendency to discursiveness. It becomes too evident, at an early period of the work, that our author is unable to resist the temptation of setting forth his views, at length, on every subject to which he has occasion to allude. A topic incidentally introduced will naturally suggest another, and having commenced by enlarging on a theme, perhaps not too remotely connected with the purport of his history, he is tempted to branch off afresh on another connected only with the subject last discussed. Thus, in course of time, he finds himself at such a distance from the road on which he set out, that his only practicable course is to retrace his steps and commence anew at his original point of departure. Of course, all the fine things that have been evolved in these various digressions he is not disposed to cut away; they are therefore allowed to remain as a proof of his volubility, and his pages are thus encumbered with heavy loads of extraneous matter which swell the book to its present enormous size.

The other quality which has been instrumental in enlarging the dimensions of Mr. Bancroft's work, is that intense admiration for European politics and politicians, vulgarly called

toadyism. That the history, and even the politics, of certain of the European powers were not without their influence on the rise and progress of the American nation is indisputable; and an inquiry into their condition would appear from time to time not inappropriate for the purpose of better elucidating the course of American affairs. Mr. Bancroft has therefore an excuse for introducing these subjects occasionally into his work; but this privilege he has abused *ad nauseam*. Not content with a brief and general statement of the condition of affairs in any particular nation at a given time, he has thought it necessary to investigate the very *penetralia* of every foreign government, to set forth the rise and progress of its views, civil and religious, and to account on philosophical principles for its every peculiarity! In other words, he aspires to write a Universal History, or, at least, a History of Universal Christendom.

A notable instance of this proclivity of Mr. Bancroft's mind appears in the second chapter of the present volume, which is devoted to Germany. Our readers are aware that the only part which Germany took in the war of American Independence was the sending of Hessian mercenaries to devastate American soil, a course which would not, at first sight, appear to entitle her to a prominent place in a work devoted, at least nominally, to the United States. Yet our author has given us a *résumé* of the history of the Germans, from their earliest emigration from Central Asia through their European conquests—among which, by the way, he includes Gaul and Britain; forgetting that, although Gaul was conquered by and received the name of France from the Franks, and Britain, in like manner, the name of England from the Angles, and, although the Franks and Angles were originally German tribes, still neither France nor England ever formed any part of the German confederation, nor, for more than ten centuries past, has their history had any essential connection with Germany. We are then entertained (?) with the German wars with Rome; with the conversion of the Germans to Christianity; with the victories of

Charles Martel (who our author gravely informs us was a German leader!); with the conquests of Charlemagne, and the formation of the new Roman Empire; with the struggles for supremacy between emperors and popes, and with the rise of free cities. Then we have the papal dominion under Leo X., with a slight episodical account of Greece in the time of Plato! the Reformation under Luther, and the principle of justification by faith! the Thirty Years' War! the formation of the kingdom of Prussia; the peace of Utrecht; the Seven Years' War; the philosophy of Kant; the poetry of Herder and Klopstock! and the political opinions of Goethe, Schiller, and Niebuhr! Why not the erection of the Great Wall of China, and the researches for El Dorado and the kingdom of Prester John?

Suppose we try and picture to ourselves what would have been the result had any of the writers of ancient history proceeded on the fortunately novel plan adopted by our historian: had Sallust, for instance, in his Conspiracy of Catiline, undertaken to treat the subject *ab ovo usque ad mala*, and to favor the Augustan readers with his views on every thing that had occurred in Rome—or out of it—from the genealogy of the wolf that suckled Romulus to the moment when the stylus should fall from his failing hand. *Manes* of the unflinching and eloquent Roman forgive us the supposition! it seems profanation to mention thy name even by way of contrast in juxtaposition with that of the modern bibliographist. But, assuming the possibility of the Augustan author indulging the proclivities of Mr. Bancroft, we may imagine what temptations would have beset him. Dire visions arise of a work which should have contained the entire history of Rome, from the fabled arrival of Æneas into Latium; the biography of Æneas himself; the loves of Venus and Anchises; the judgment of Paris and the Trojan War—perhaps the building of Troy and the stories of Laomedon and Hesione—undoubtedly intermingled with general disquisitions on the nature of the gods, goddesses, heroes, and sea-monsters. Hesione might have suggested Andromeda, which would have furnished an excuse for en-

larging on the history, natural and political, of Africa. Of course we should have had a full account of Mauritania and Numidia, with the story of the building of Carthage, and the loves of Æneas and Dido—possibly an excursion into Egypt and the kingdoms of the East. Greece, of course, could not have been omitted, and the historian would then probably have taken a northward flight and instructed his readers in the antiquities of Ultima Thule!

Mr. Bancroft might have been forgiven his want of fidelity to his subject, had its sole effect been to protract the length of his book, and put additional money into the pockets of the enterprising publishers—for we would not accuse him of doing so on the principle of the peripatetic vender of "pure Orange County milk," who combines three quarts of water, more or less, with every four quarts of the lactean fluid. But other and much more serious results have arisen from the unfortunate tendencies to which we have alluded. Whatever may be the character and object of an historical work, there are certain qualities which it is essential that it should possess. It should be accurate; it should be lucid; it should be written in a good style; it should be logical; and it should deal principally with the subject of which it professes to treat.

It is not too much to say that in Mr. Bancroft's History all of these qualities are conspicuous for their absence; and, moreover, that it is to the presence of the two above-mentioned characteristics—namely, a discursive, garrulous tendency, and a disposition to sermonize on the affairs of other nations, that these defects are in a great measure attributable. Where the attention of an author is confined to one subject, a moderate amount of care will usually suffice to insure accuracy. As the sphere of his inquiries enlarges, the danger of error increases; and a proportionately greater degree of attention becomes requisite to avoid perpetrating grievous blunders. What must then be the risk encountered by one who, while proposing to write the history of his own country, has undertaken to elucidate that of all the principal nations of both continents? It is clear that he has prescribed for himself a task

exceeding any of the labors of Hercules; and the amount of crude matter which he has brought together can be worked up roughly, as it is, only at the expense of accuracy on many important details. This privation is sometimes so obvious that it is astonishing it should have escaped the notice of the author himself; as, for instance, where he tells us that

"The Turkish empire affected the course of American affairs both during the war and at its close. The embroilment of the Western maritime kingdoms seemed to leave its border provinces at the mercy of their neighbors."—p. 54.

It does not seem to have occurred to Mr. Bancroft that, although this statement shows that the course of American affairs affected the Turkish empire, it does not, in the least, tend to show that the Turkish empire affected the course of American affairs. This confounding of cause and effect is not an uncommon blunder with our author.

One of the subjects to which Mr. Bancroft has given especial consideration is the Republic of the United Netherlands. He appears to have considered it in some degree necessary to connect the Republic with the history of the United States, in order to account for occupying so much time and space with her concerns; and he accordingly tells us that

"The deepest and the saddest interest hovers over the Republic of the Netherlands, for the war between England and the United States prepared its grave."—p. 57.

Mr. Bancroft has devoted the greater part of two chapters (xii. and xx.) to the discussion of the affairs of the Dutch Republic; and in both chapters he has shown that the United Netherlands not only refused to connect themselves in any way, direct or indirect, with the United States, but carefully avoided every step which England could possibly construe into favoring their cause. According to his own statement,

"The Dutch Government, through all its organs, met this only overture of the Americans by (*sic*) silence and total neglect. It was neither put in deliberation nor answered."—p. 261.

The real reason for which England declared war against

the Dutch Republic was that the latter evinced a disposition to accept the maritime code instituted by the Empress of Russia. This is stated elsewhere by the author himself, as follows:

"The contemporary documents show that England declared war on the Dutch Republic *solely* to prevent her from being unconditionally received into the armed neutrality."—p. 9.

Now, this armed neutrality was organized by the European powers for the sole purpose of protecting the commerce of the neutral nations from being preyed upon by belligerents, under pretence of searching for contraband of war, or of enforcing a paper blockade. With this view they fitted out naval forces to protect the ships of such nations as adhered to the alliance, in navigating the Mediterranean and waters of the coast of Europe. It was particularly displeasing to Great Britain that the Netherlands should be received into this alliance, as they had done most of the carrying trade with France, and afforded the most tempting prizes to the British cruisers. The United States was of all others the belligerent to whom this armed neutrality had least reference, and what reference it had was antagonistic, as it was originally suggested to the Russian Empress, by the fact that

"An American privateer hovered off the North Cape, and took seven or more British vessels bound for Archangel."—p. 257.

Mr. Bancroft has nowhere made it appear in what manner the destiny of the Dutch Republic was affected by the war with England, but it is matter of history that this war did not annihilate its independence; the Government of the United Netherlands is well known to have endured until their conquest by France in 1794.

These curious inconsistencies and self-contradictions are of such constant occurrence that we can hardly open a volume of the History without encountering instances of them. In a very foggy dissertation on the state of affairs in the Spanish provinces we find the following marvellous statement:

"The remoteness of the provinces on the Pacific still more weakened the tie of supremacy, which was nowhere confirmed by a common language, inherited traditions, or affinity of race."—p. 48.

It would be difficult to point out a single province "on the shores of the Pacific" in which the traditions and the dominant race were not those of Spain. It should be borne in mind that Mexico, Colombia, Peru, Bolivia, and Chili, were among the oldest on the American continent; that our author is speaking of the latter part of the eighteenth century when the Spanish was the predominant race in every one of these colonies; and that, moreover, they were bound to the mother country by the tie of a common religion, which a large portion of the English colonies in North America were not.

On the subject of the influence of Marie Antoinette in promoting the alliance of France with the United States, Mr. Bancroft has involved himself in a flat self-contradiction. In the first chapter of the volume before us he informs us that

"She had an ascendency over the mind of the king, but never aspired to control his foreign policy, except in relation to Austria. For the moment her emotions ran with the prevailing enthusiasm for the new republic; but they were only superficial and occasional, and could form no support for a steady conduct of the war."—p. 45.

In direct opposition to this statement, we are subsequently informed that

"While Frederic was encouraging France to strike a decisive blow in favor of the United States, their cause found an *efficient advocate* in Marie Antoinette."—p. 111.

It will be seen from these instances, which might be multiplied *ad infinitum*, that Mr. Bancroft's History is neither accurate nor logical. The discursiveness and love of enlarging on European politics which are characteristic of our author's statements, and to a great extent accountable for his shortcomings in these respects, have exercised an equally pernicious effect on his style. When an author, instead of confining himself to his subject, flies off at a tangent at each idea as suggested, it is to be expected that he will involve himself in labyrinths of confused sentences, the thread of which altogether escapes the reader, if not the writer. Moreover, it would seem as if the veneration with which Mr. Bancroft regards European sovereigns prompted him always, in speak-

ing of them, to employ phrases so ambitious that the sense intended to be conveyed is entirely lost. The result is a degree of turgidity and obscurity which would discredit a Western stump orator. What are we to think, for instance, of such language as the following, which occurs at the very outset of the volume?

"The Government of England, in seeking to suppress in her dependencies English rights by English arms, *made war on the life of her own life.*"—p. 35.

What is the "life of a life?" and how can it be made war upon?

The principle on which the English Revolution of 1688 was achieved is set forth in similar oracular language:

"These revolutions could not have been achieved except *through a categorical principle* that would *endure no questioning of its rightfulness.*"—p. 87.

A still more remarkable specimen of what is intended for fine writing, but is really something very much the reverse, is furnished by our author when he comes to speak of France:

"Louis the Sixteenth and Marie Antoinette, when they embarked for the liberation of America, pleasure on the prow and the uncertain hand of youth at the helm, might have cried out to the young Republic which they fostered, 'Morituri te salutant.'"—p. 47.

This effusion is worthy of the orator whose answer to his enemies was, "That his home was in the region of the settin' sun."

The antagonism with which Spain regarded the struggle of America for independence, our author attempts to account for by the following remarkably expressed theory:

"As epidemic disease *leaps mysteriously* over mountains and crosses oceans, *spores* of discontent might be unaccountably *borne* to *germinate* among the many-tongued peoples of South America."—p. 50.

In speaking of the Republic of the Netherlands, Mr. Bancroft tells us that

"Its merchants, land-holders, and traders, *teemed* with heroes and martyrs."—p. 58.

which was certainly a novel function for "merchants, landholders, and traders" to fulfil! But the most extraordinary discovery is that which our author claims to have made with regard to the teachings of the Christian religion:

"In the life struggle between the Islam and Christianity, between a form of religion *bounded by the material world*, and the religion which sanctifies *the intuitions of reason*, Charles Martel, a German warrior, leading into the field men of the Christianized tribes of his country, won the victory for that side *which teaches that the light of ideal truth is ever present with the human race.*"—p. 63.

We have here two functions attributed to the Christian religion, which neither friend nor enemy had ever discovered for it hitherto. First, that it sanctifies the intuitions of reason! By the way, will Mr. Bancroft inform us what are the *intuitions* of reason? (a faculty which has hitherto been supposed to concern itself rather with *deduction* than intuition), and also, how these intuitions are sanctified by a doctrine based wholly on revelation? Secondly, that it teaches that the light of ideal truth is ever present with the human race. We are not quite sure that we comprehend what this last apothegm means—and, therefore, will simply remark that, if *ideal* truth be ever present with the human race, it is a pity that *actual* truth should be so hard to find, and that it may sometimes be sought ineffectually even in the pages of an historian!

Mr. Bancroft has evidently a weakness for imagery, and does not pause at a mixed metaphor. Of Goethe he tells us,

"The names of Franklin and Washington *shone and sparkled* in his heaven of politics and war."—p. 91.

and the following elaborate figure is selected to illustrate the course of the English parliament:

"As a *massive* fountain, when its waters are first let loose (*sic*), rises slowly to its *full height*, so the mind of parliament needed time to collect its energies for official action." (!)—p. 142.

It is a pity that Mr. Bancroft should have forgotten that there is such a word as *bathos*, and that it may suggest itself to the reader on perusing such effusions as these.

In the various respects to which we have thus far called

attention, the present volume does not appear to be more conspicuously in fault than its predecessors; but, in the matter of fidelity, or rather infidelity, to the subject of which he undertakes to treat, our author's offences have increased a hundred fold. At the very outset of the work we have three long chapters devoted to a discussion of the state of the various powers of Europe. We find high-flown disquisitions on the political status of Spain—of Russia—of Austria and Prussia —of Sweden and Norway—of Italy— of Denmark, and of the Netherlands—to say nothing of the extensive chapter on Germany to which we have already alluded. We are treated to long accounts of their domestic and foreign relations—of their efforts to regulate the balance of power in Europe, and of their negotiations with one another, respective or irrespective of the question of American independence. We have anecdotes of the Empress Catharine and the Emperor Joseph, of Maria Theresa and Marie Antoinette, of Gustavus Adolphus and Frederic II., together with accounts of the efforts of Spain to recover Gibraltar, the attempts of Russia to inaugurate a general European policy, and the schemes of Austria for the absorption of Bavaria!

Among this multitude of topics foreign to the purpose the portion of the volume devoted to American history shrinks into an insignificant space. It is not until the fourth chapter that this portion of the work may be said even to begin. This chapter opens at one of the most interesting periods of the Revolution, in the year 1778, when Washington, in his camp at Valley Forge, received the news of the French alliance. But the pen which was so prolific of sermons on European politics becomes, for the first time, singularly reticent. Where the enthusiasm of the reader would naturally kindle that of the author appears to cool. When he comes to speak of the battle of Monmouth, one of the most stirring scenes in the Revolutionary War, his pen becomes nerveless and dead; that memorable conflict, by many considered the turning-point in the war of Independence, in which Washington, then pre-eminently the saviour of his country, by prompt and earn-

est action, converted a disgraceful defeat into a brilliant victory; and on hearing of which, the King of Prussia, himself the first general of his time, remarked, "America is lost for England!" But Mr. Bancroft is not at home in war topics. The whole conflict is related so tamely and with such a meagreness of detail, that the reader has nearly reached the conclusion of the engagement before he becomes aware that he has been reading of a battle at all.

Our author is evidently in a hurry to recross the ocean, and after a couple of chapters devoted to America we are once more transported to Europe—this time to Spain. We have two or three chapters devoted to negotiations between Spain and the United States, and as many more to the political condition of the country, and various negotiations for peace, all of which appear to have been equally futile; and then we are permitted to have an extremely brief and vague sketch of the war in the northern department. This includes the brilliant victory of General Wayne at Stony Point, which is, however, disposed of in a single page; and then almost before we know it we are again involved in the war in Europe. It really would seem as if we were never to be free from the discussion of European affairs; for here is a long chapter devoted to the negotiations inaugurated by the Empress of Russia for the formation of a league of neutral nations for the protection of commerce on the high seas. Here we have Russia, Prussia, Austria, the Netherlands, France, England, Sweden, and Denmark, with an amount of diplomatic correspondence incomprehensible to any but an experienced politician; but, as usual, America is kept sedulously in the background.

The campaign in South Carolina, the treason of Arnold, and even the surrender of Cornwallis at Yorktown, which virtually concluded the war, are treated with the author's usual dryness of narration and inanity of detail; but, as the war-horse pricks up his ears at the sound of the trumpet, so the veteran politician revives when he arrives at the period of the final negotiations for peace. If we had three

chapters of European politics at the opening of the volume, we have four of ministerial diplomacy at the close! The morsel is too sweet to be readily abandoned; and we can almost see the *gusto* with which he rolls over his tongue the names of Fox, and Shelburne, and Burke, and Oswald, and Granville—of Vergennes and Rivardere—of Jay, and Adams, and Franklin. We are carried from Paris to London, and from London to Paris, and involved in a cloud of disquisition and negotiation, until we are almost brought to the conclusion that history is but a tangled yarn.

How many more volumes of this kind may emanate from him before his "History" is completed it would be presumptuous to attempt to foresee; but when the last volume shall have issued from the press, and Bancroft's History of the United States shall have taken its place on the shelves of the public libraries as a completed work, it is certain that the intelligent general opinion will remain undisturbed, that, notwithstanding the labor which the author has bestowed on his overgrown and flabby bantling, the History of the United States remains yet to be written.

ART. V.—1. *Catalogue of the Officers and Students of Lafayette College for the year* 1873–'74, *with the Courses of Study.* Easton, Pa.

2. *An Address at the Dedication of Pardee Hall, Lafayette College*, October 21, 1873. By ROSSITER W. RAYMOND, Ph. D., Lecturer upon Mining Engineering in Lafayette College, etc., etc.

3. *Catalogue of the Officers and Students of Muhlenberg College*, Allentown, Pa., for the Collegiate year ending June, 1874.

4. *Catalogue of Dickinson College for the Academical year* 1873–'74. Carlisle, Pa. 1874.

5. *Register of the Trustees, Officers, and Students of the Lehigh University, South Bethlehem, Pa., for the year* 1873–'74, *with the Plan of Organization and the Course of Instruction.* Tuition Free. Published by order of the Board of Trustees.

6. *Catalogue of Wesleyan University*, 1873–'74. Middletown. 1873.

7. *Alumni* Record of Wesleyan University, Middletown, Conn. Originally compiled by ORANGE JUDD. Boston. 1873.

THOSE in the habit of reading our discussions will be likely to infer, from the above titles, that we shall take the liberty of making some criticisms and comparisons. Nor will their inference be entirely erroneous. But we are not the less glad on this account that, in the present instance, we have much more to commend than to censure. Did we shrink from the latter, however, when we think it is deserved, we should not call our journal a *Review*.

In our opinion, there is quite as much turpitude, on the part of a public writer, in representing a spurious college as a genuine one, as there is in representing brass as gold. In either case he is guilty of fraud. But who would not rather lose a few hundred dollars by accepting bad money for good money, or for his merchandise, than find that he has paid an equal amount or more for the education of son or daughter, not only in vain, but with a pernicious result? We need not pause here to indicate how much mischief is done in this way.

Let us bear in mind, that to praise incompetent teachers is really an injury to those teachers themselves, as well as to that portion of the public who are led to regard them as competent. The former may, indeed, gain pecuniarily by being represented as what they are not, but they lose morally, for why should those praised as learned and accomplished educators take the trouble to study and toil for the improvement of their intelligence and judgment? Nor is this by any

means the worst of it, for the habit of being eulogized, *ex-officio*, renders them intolerably arrogant.

We have, from time to time, presented to our readers some melancholy examples of this class, the most notable of which, perhaps, is that of the Provost of the University of Pennsylvania. It is not with any malevolent intent we recall the case of this gentleman, for we wish him no evil; we do so merely because certain of his performances, combined with the character of the institution to which he is, or, at least, was, an appendage,* had led us to form a very low estimate of the universities and colleges of Pennsylvania.

Most cheerfully do we admit now that this was an erroneous conclusion. We admit, further, that some of the same Pennsylvania friends of education, who gave us emphatic testimony as to the low grade of the pretentious Philadelphia institution, were equally emphatic and earnest in assuring us that there were Pennsylvania colleges which ranked in thoroughness and efficiency with the best in the United States. They indicated one particularly, and strongly urged us to visit it, confidently predicting that if we did we would readily acquit them of exaggerating its merits in any respect. We well remember that the best informed of these gentlemen said, further; "There is another Pennsylvania college which is also well managed, and has excellent professors, but lacks money." We may now remark that the two institutions thus pointed out to us were Lafayette College, Easton, and Muhlenberg College, Allentown. These intimations and assurances we received just two years since, but, although we had implicit faith in the intelligence and integrity of our correspondents, we found it impossible to devote the necessary time and attention to the subject until the beginning of last month.

Our readers may remember that two years intervened

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*It will be remembered that, when the learned Provost was addressed as "President of the University," he replied somewhat indignantly, "*There is no such person*," adding that he is the "Provost," etc. The results showed that, had he said the University of Pennsylvania had no *head*, he would have been much nearer the truth.

between the calling of our attention to the Philadelphia institution and the publication of our article entitled, "The University of Pennsylvania and its New Windows." *

The inference would naturally be that we are slow in our movements, and, in a certain sense, so we are. One reason why we delayed so long in the case of the Philadelphia institution was that, much confidence as we had in our correspondents, we found it difficult to believe that it had fallen quite so low as was represented; upon the other hand we confess we thought there must be some exaggeration of the high merits ascribed to Lafayette, and of the enlightened skill and judgment with which it was conducted. In the one case we were constantly receiving complaints filled with jeers and sarcasms; in the other we were as constantly receiving assurances of most efficient work and progress. We knew that in neither instance had our informants any motive less noble, or more reprehensible, than to serve the great cause of education in Pennsylvania. But we are never satisfied with hearsay, no matter how honorable and trustworthy is its source. In this respect we adopted more than a quarter of a century ago the precept of Seneca, that those who judge should investigate, and those who rule command—

Si judicas, *cognosce*; si regnas, *jube*.

When turning our attention to a college university or other educational institution claiming a high rank, we proceed precisely on the same principle we do in preparing an essay on the ancient Egyptians, the Hindoos, or the Druids. As in any of the latter instances we seek information wherever it is to be had, let it cost what time and labor it may, so do we in the former. Those who understand this will not wonder that an individual, having the amount of labor we have to perform on this journal, cannot be very rapid in his movements.

The same habit of careful study and investigation will account for the fact that, of all the educational institutions we have criticised these twenty years past, in other journals as

* N. Q. R., No. LI., Dec., 1872.

well as in our own, there has not been a single instance in which our estimate has not been accepted and verified as just, by competent, impartial judges. Thus it is that we can confidently ask any one, at this moment, what institution have we denounced as a sham or imposture which has not in time proved itself to be one? Upon the other hand, what institution possessed of acknowledged merit have we ever assailed for any purpose, or through any motive whatever? We denounced institutions in this State fourteen years ago which have long ceased to exist; we could also mention those which have recently passed out of existence, or into different hands from those whose utter incapacity and false pretences we had exposed to public scorn in these pages. Then, if we turn to the other side of the picture, in what instance have we represented a sham as a faithful, efficient institution?

More than once we have given our principal reasons for taking these pains. We have told the curious why it is that we make those "odious comparisons," and exhibit those still more odious contrasts—just such as will necessarily arise in the present article when we place Lafayette College and the University of Pennsylvania, the Wesleyan University and Dickinson College, or Muhlenberg College and Lehigh University side by side. But, as the memory, even of the most intelligent portion of the public, is proverbially defective, we will give our reasons once more as briefly as we can. Let those who would blame us for repetition in doing so please to bear in mind that, among the greatest educators of antiquity, it was held as an axiom that repetition is the parent of knowledge—*Repetitio mater scientiæ est.* Without further preface, then, we beg leave to quote, from the first prospectus we ever issued, the following paragraph:

"*Education* in every form, including Art and Science, will receive *prominent and friendly attention;* and, whatever seems calculated to *retard* or *vitiate* it, whether under the name of a text-book, a painting, a *seminary*, a gallery, or a *college*, will be subjected to *fearless* but fair and temperate criticism."

This was our solemn promise fifteen years ago. Whether

we have kept it or not, our readers, and not we, are the proper judges. Then why did we make that promise? Our reply is that, in all our reading, we had not learned that any nation had attained permanent greatness without possessing a high degree of enlightenment. This is true not only of Greece and Rome, but also of Egypt, Assyria, and Persia. Moreover, there was not one of those nations which was not greatest when it had its most learned men and its profoundest thinkers. Witness Greece in the time of Pericles, Socrates, Plato, and Aristotle; and Rome in the time of Virgil, Horace, Cicero, Sallust, and Livy. And if we glance at the great nations of the modern world—at England, France, Spain, and Germany—shall we not find, in every instance, that in proportion as each has been enlightened has it been great and powerful? This fact is so familiar to every intelligent reader that it is superfluous for us to enter into details to illustrate it. We may, however, mention France as compared to Germany. As long as the former paid proper attention to education, and, accordingly, was so prolific in great authors and scientists, there was no danger of her being overpowered or crushed by the latter. Remember what Spain was in the time of Cervantes, De Vega, and Calderon, and see what she has been since she ceased to produce such men. Both France and Spain have bitterly realized the warning of Delille: "En voyant la décadence des mœurs d'une nation, je serai assuré de celle de son éducation."

Of all foreigners who have written about our people, no one has discussed our condition and prospects in a more friendly or more truly philosophical spirit than De Tocqueville. But there is nothing which he urges more earnestly on our statesmen than the necessity of establishing a high grade of education. "It is important," he says, "that those who, by their natural disposition or their fortune, are destined to cultivate letters or *prepared to relish them*, should find schools where *a complete knowledge of ancient literature* may be acquired, and where the *true scholar* may be found. A few excellent colleges would do more toward the attain-

ment of this object than *a multitude of bad grammar schools*, where superfluous matters, *badly learned*, stand in the way of sound instruction in necessary studies." *

But it is alleged, and the allegation is often admitted by themselves, that what Americans appreciate most is the dollar. Assuming this to be true, who can acquire money honestly and honorably without intelligence? One of the wisest thinkers France has produced in her happiest days has aptly and truly described knowledge, or a sound education, as a rich, inexhaustible mine, yielding wealth, influence, and power.

These were the reasons why we resolved, fifteen years ago, to "give prominent and friendly attention" to education and to subject "to fearless criticism" whatever seemed calculated to *retard* or *vitiate* it. We were quite as well aware then as we are now, that criticism is, in the estimation of those who are criticised, a hateful thing, but we knew that precisely on the same principle the sentence of the judge is equally hateful to the malefactors upon whom it is passed.

But, to return to our main subject. When gold, copper, brass, tin, and pewter, are placed side by side as they are used in commerce, it requires but little skill in metallurgy to distinguish them from each other. But, let us suppose that all the baser metals are cunningly enveloped with tinsel, and labelled "gold," "sterling gold," "California gold," &c., it will be admitted that then it becomes necessary to strip off the tinsel in order to detect the fraud. To those who put on the envelopes and labels this is a very unamiable thing; and, perhaps, it is but natural that they should be indignant and threatening in proportion as the metal enveloped and labelled is more or less base.

We would not be understood, however, as representing any of the institutions whose catalogues are given at the head of this paper by any of the baser metals, except brass! This would be unjust. Still more unjust would it be on our part to

* *Democracy in America*, vol ii., chap. xv.

attribute ill-temper or discourtesy even to the worst of them, since there is not one whose president or professors made the slightest objection to our seeing their classes.

We mention this as worthy of remark, and recognise it as a step in advance. It is not for us to judge whether our criticisms on the course of the learned Provost of the University of Pennsylvania, under similar circumstances, had any thing to do with this perfect unanimity among the different heads of those institutions, as to the propriety of admitting to their recitations strangers not unlikely to criticise them. Be this as it may, the result of our observation and experience in this matter is, that we think it may now be regarded as a rule, without an exception, that no college or university, in a word, no educational institution, male or female, of any denomination, having any just pretensions to a respectable rank, pretends any longer that the recitations of its classes should be heard only by appreciative, credulous ears, or that the classes themselves should be seen only by admiring eyes. In short, so much progress has been made in this direction, in public sentiment, that, at this moment, the fact that the head of an educational institution refuses, under any pretence, to allow his recitations to be heard, is held to be pretty conclusive evidence that they are only such as would do no credit to any institution.*

We beg leave to mention another conclusion which we

* It is quite fortunate for the Jesuit and other Catholic colleges of our time and country, which are under ultramontane rule, that the Syllabus comes to their relief in this matter, by making it a mortal sin to have any thing to do with heretical journals or journalists, but especially the latter. It serves them just as well in protecting their classes from too curious profane eyes, as the sacred mistletoe served the Druids in similar circumstances. That we do the good Fathers, and those who, like them, make the Syllabus their Holy Gospel, no injustice by this remark is sufficiently proved by the fact that the Catholic colleges and seminaries which are not under ultramontane rule, and need no cloak, are as much open to the public, and hold themselves as amenable to public sentiment, Protestant and Catholic, as the most liberal and enlightened of our Protestant institutions.

find has been very generally, if not universally, arrived at even among those head-masters of institutions, academies, etc., who have most reason to dread an exposé. It seems the whole tribe have agreed among themselves that, however much to be deplored the fact is, there is no use in threatening us, or trying to frighten us. They admit that in every case threats have only made matters worse, even when carried out to their utmost extent. Instance the case of the famous Pennsylvania University. Here they saw the score of Philadelphia newspapers, dailies and weeklies—with two or three exceptions among the better class—assail us, day after day, for weeks in defence of the Provost who was no President, and of the university which was no college! But they also saw that the chief result of all this mob work was to cause the great University and its learned Provost to receive two flagellations instead of one! They were astonished to find how little we cared about the immense howl and uproar made by the daily and weekly luminaries of the good Quaker city. Doubtless, the class of head-masters alluded to have also profited by the cases of Vassar College, Seton Hall College, Stanford Military Institute, etc. But the case, which above all others seems to have been most wholesome in its effect in showing how much worse than useless it is to attempt to threaten and bully the "National Quarterly," is that of the famous "Greenwich Academy of Boston University," or rather of its misguided and unhappy head-master. At all events, let the cause or the causes be what they may, it seems that in future we are not to be threatened or bullied.

As for the heads of the Wesleyan University, Lafayette College, and Muhlenberg College, they are far too enlightened, and understand their duties as educators far too well, to have attempted, at any time, to make star-chambers, Pythian chapels, or Druidical temples of their class-rooms.

As we have intimated, in alluding to the erroneous impression which the performances of Provost Stillé had led us to entertain of the universities and colleges of Pennsylvania, our feeling, after having heard several of the Greek and Latin

recitations at Lafayette College, was one of most agreeable surprise. When we inquired for the President, the Rev. Dr. Cattell did not say gruffly and reproachfully, or otherwise, "There is no such person," but responded to us in the cordial, courteous manner in which the heads of such institutions who are confessedly qualified for their positions have never failed to do, in America more than in Europe.

Instead of evincing any unwillingness that we should see whatever we wished to be informed upon, Dr. Cattell voluntarily and most cheerfully conducted us to every department of the institution, requesting the professors in each to afford us every possible facility to form an opinion of their system of teaching and its general results. It was evident that the professors were as willing as the President, and both were equally well aware how many colleges and universities of lofty pretensions we had criticised, and had exasperated in no slight degree by our criticisms.

Our only regret is that, in the limited space prescribed in this article for glances at the six different institutions mentioned at its head, it is impossible for us to do justice to the convincing evidences of a high standard of education, both classical and scientific, which everywhere confronted us at Lafayette. But our readers know that it is not our habit to throw away or forget such of our notes as we cannot use in one number of our journal. There is nothing claiming comment, whether in the language of approbation or censure, which we do not carefully preserve until we can give it the amount of thought and space which its importance demands. In reading a good book for review we mark many passages, but can only comment on very few in our critique, since other books of different qualities also claim our attention. But the good things necessarily passed over in the former become available again and again; at one time, as an illustration of a principle; at another, as pointing a moral, etc. We make precisely similar uses of the more important facts we learn in visiting institutions like Lafayette.

The College is situated on an elevated plateau, and at a

distance looks much more like a handsome town or city, with its various groups of more or less extensive buildings, than Easton, which seems crouching, though cozily, in the valley beneath it, and from which it is reached by a series of winding terraces that give the ascent quite a picturesque and attractive appearance. Pardee Hall, dedicated with becoming pomp a year ago, is one of the largest and finest college buildings in this country. It is devoted almost exclusively to the scientific department which includes engineering in all its branches, as well as mining, metallurgy, chemistry, &c. The chemical laboratories are on the upper floors; they are very extensive, embrace a full supply of the most improved apparatus; and the advantages they afford, conducted as they are by professors whose qualifications are beyond dispute, seem fully appreciated by a large number of busy students.

We find a description of the new building in one of the Easton papers, which we cheerfully make room for here, only premising that the facts stated being indisputable, they will give the reader an idea of the scale of magnitude upon which improvements are made, and educational facilities increased at Lafayette; they will also show that we do not exaggerate what is being done for education at that institution; especially if it be remembered that they relate only to the scientific department, and then the precept be adopted in reference to the various other departments.—*Ex uno disce omnes:*

"This magnificent structure cost over two hundred and fifty thousand dollars, and is the princely gift of Mr. Ario Pardee, the founder of the Scientific Department of the College. It consists of one centre building five stories in height, fifty-three feet front, and eighty-three feet deep, and two lateral wings, one on each side of the centre building, measuring sixty-one feet in length and thirty-one in width, four stories in height, including a mansard roof, the whole terminating in two cross-wings forty-two feet front and eighty-four feet deep, and four stories in height. The entire length of front in a straight line is two hundred and fifty-six feet. The material is the Trenton brown stone, with trimming of light Ohio sandstone. It is heated throughout by steam and lighted by gas. The first floor is mainly devoted to the study of mining and metallurgy; the second contains the geological and miner-

alogical cabinets, a spacious auditorium, and smaller lecture-rooms, reading-rooms, and professors' studies. The third floor is devoted to the engineers. The right wing is occupied by the mining engineers. A large drawing-room occupies the lateral wing, while the cross-wings embrace rooms for models and various professional purposes. The left wing is occupied by the civil engineers. The lateral wing comprises a drawing-room, and the cross-wing is divided into rooms for lectures, working models, collections, and the like. On the fourth floor the same ample provision has been made for the chemists. The centre building is divided into two large rooms, one for technical collections, and the other an assistant's room. The lateral wings are intended for qualitative and quantitative analysis. The cross-wings at the extremity of the building are occupied by additional laboratories, lecture-rooms, and professors' studies. The fifth floor of the centre building is mainly occupied by laboratories for original researches. In determining what rooms were needed, and the best arrangement of them, similar buildings in Europe, as well as in this country, were carefully studied, and liberal provision has been made in all the departments of instruction for every aid which has been devised for the most thorough and attractive teaching, and also for the prosecution of original researches.

But it is the classical department which pleased us most. We have seldom heard a better recitation than that of Prof. Youngmans' class in Greek—the text read being Demosthenes' Oration on the Crown. It was also our privilege to be present at a recitation in the Greek of Eusebius, conducted by the Rev. Dr. Bullard, Professor of Christian Greek and Latin. We are not orthodox enough to admire the Ecclesiastical History of the Great Father of the Church as much as the Oration on the Crown; but we really did admire the manner in which the former as well as the latter were translated at Lafayette. It should be remembered that in no college in this country is more attention given to comparative philology. At the head of this department is Dr. Francis A. March, editor of the series entitled "Christian Greek and Latin Writers," of which two volumes have already been published by the Messrs. Harper, namely, "Eusebius" and "Latin Hymns." Prof. March is also the author of "A Comparative Grammar of the Anglo-Saxon Language, in which its forms are illustrated by those of the Sanscrit, Greek, Latin, Gothic, old Saxon, old Friesic, old Norse, and old High German."

Just after we had heard recitations in Horace and Cicero, Dr. Cattell politely remarked that it is always his wish that visitors would frankly suggest whatever they might deem an improvement in any department. "We make no claim," he added, "to perfection. We are constantly discovering defects ourselves, and as constantly trying to remedy them. Precisely in the same spirit, and for the same purpose, we wish visitors in whose judgment we have confidence to point out to us whatever strikes them as a defect, or whatever they think is lacking in our system." In reply, we beg leave to assure him of the simple truth, namely, that we only wish one-tenth of the colleges and universities we have visited were so free from defects and privations as Lafayette. It is certainly no mere compliment to say that the enthusiastic, progressive spirit of the head of Lafayette pervades every department of the institution, and Dr. Cattell being a man of thorough culture himself—one who has mastered both ancient and modern languages—we had not conversed with him long before he reminded us of the precept that whatever is worth having, and retaining, must be the reward of unwearied toil.

"Qui e nuce nucleum esse vult frangat nucem." *

The transition from Lafayette College to Lehigh University we found very striking, but not more so than we had been led by many friends of education to expect. Some interested parties, and those who judge the motives of others by their own, will say that there is something selfish in our lack of admiration for Lehigh University. It is not so, however. We know no one connected with that institution. From no one connected with it have we, so far as we are aware, ever asked any favor. We did not even ask to be shown any of the classes on the day of our visit. One of the professors offered to show us the halls, rooms, &c. We accepted his offer. This, with a copy of the catalogue or "Register," together with the information we had received from various sources, was quite enough for us. "Science" is the great thing

* Plautus, *Curcul*, i., p. 55.

at Lehigh. On entering its halls the first impression one receives is that of an immense smithery, in which iron, brass, tin, &c., are forged into all sorts of implements. As we pass from one "hall of science" to another, seeing nothing but "science," "science"—all "science," having a bearing more or less direct on the Lehigh Valley and its *railroad*, we are forcibly reminded of the reply of Monsieur Jourdan to the Maître de Philosophie. The maître has been giving him a long, high-sounding definition of "la physique," for which he thanks him as follows:

"Il y a trop de tintamarre là dedans, trop de brouillamini." We thought there was far too much "tintamarre" and too much "brouillamini" at Lehigh, and we confess it also occurred to us that the most appropriate name for the institution as a whole would be the "Railroad University." Nor did we change our mind in this respect on examining the catalogue, except that we thought one department might, with great appropriateness, receive the name of the "Coal Trade Academy, and Cheap Board Hall."

It seems impossible to induce a respectable number of persons to appreciate the "superior scientific advantages" offered by Lehigh University. In order to remedy this little difficulty a change was soon made, which is recorded in the catalogue before us as follows:

"Through the generosity of the Founder, and by a resolution of the Trustees, passed in July, 1871, tuition was declared to be *Free* in all branches and classes."—p. 33.

This sounds well. One would think it would have the desired effect, but it has not. There are very few students. Perhaps, it is because many think that the tariff on rooms, board, "chemical materials," instruments, etc., etc., brings up the total cost of the student at Lehigh to an amount exceeding the total cost at colleges which do not pretend to be "free," but may honestly pretend to give value in sound instruction for the charge they make. But let the reader judge from the following items: The charge for board and lodging at the University is $5 per week. Rule 9 is, "*No furniture* for

rooms will be provided by the University" (p. 34). Then add the price of furniture to that of board. Everybody who has to travel in the country is aware that in most taverns the following legend, in large letters, is conspicuously posted: "Tickets for dinner to be had at the counter, price 50 cents." Lehigh University prints in its catalogue substantially the same piece of information, running thus:

"*Meal tickets* will be furnished by the steward to students *or friends visiting them* at 50 cents each, *payable in advance.*"—p. 34.

Neither the student nor his friend may eat a mouthful until he has first laid down his 50 cents! Some are malicious enough to say that this is by no means the worst of it; that the "meal," which has thus to be paid for in advance, is really not worth more than 25 cents. But, be this as it may, no trust is to be expected. Whether the student wants to fortify his stomach or his character, it is all the same; witness the following:

"The fee for the diploma on graduation *in any of the schools* is $10, *payable before receiving it.*"—p. 34.

It may be remembered that, in our criticisms on the University of Pennsylvania, we humbly tried to explain how it was that so large a number of the graduates of that institution could not "speak five minutes without breaking Priscian's head," and could spell only "as it pleased their own fancy." We took the liberty of alluding to the current report that that institution did a large business in diplomas. Whether Lehigh University has adopted the same plan or not the reader may judge. At all events, if it only got sufficient demand for its "meal tickets," its "diplomas," etc., it could soon very well afford to be "free."

The reader will remember that the Pennsylvania institution alluded to in a preceding page, and which was described to us by a competent judge as "wealthy in the learning, ability, and zeal of its professors, but poor in its pecuniary resources," was Muhlenberg College, Allentown, Pa. Visiting Muhlenberg the day after our call at Lehigh, we experienced another very agreeable "change of scene and circumstance," and soon

became satisfied that, at least, the first part of the description was correct. The Rev. Dr. Muhlenberg received us courteously and kindly, and conducted us to his principal class-rooms, introducing us to the professors in turn; in a word, he was just as frank and communicative in reference to his whole system, and the manner in which it is carried out, as Dr. Cattell was in regard to his, and more than this the most exacting could not desire. Nor were the Muhlenberg professors less cordial or less urbane than their President. Accordingly, we had the pleasure of being present at recitations in Greek, Latin, German, English literature, and rhetoric. Our predominating sentiment at the close was, that it is much to be regretted that Muhlenberg is not more liberally endowed than it is. It belongs to the Lutherans, who are numerous in Pennsylvania. Many of them are wealthy, and certainly they could not make better or more creditable use of their superfluous wealth than to devote it to an extension of the educational advantages now offered by Muhlenberg. There should be more buildings, a larger library, and a more extensive scientific department; above all, the professors who perform their duties so faithfully and so well should have salaries sufficient to make them comfortable. We trust we need hardly say that we do not mean by these remarks to depreciate the buildings of Muhlenberg, or their educational appliances; nor do we mean any reflection on its well-selected though incomplete library. Still less would we impute to the good-humored professors any disposition to grumble at the scantiness of their incomes, for we have seen none that seem better satisfied with their destiny as educators. What we do mean is, that there are institutions in Pennsylvania not possessed of one-tenth the learning or talent of this modest college, that have twenty-fold as much wealth and educational appliances at their command.

Of Dickinson College we had heard contradictory accounts from time to time; the general report, however, was that it had been a good institution, but that, instead of improving in recent years, it had sadly degenerated. This we were really unwilling to believe; and with this feeling we go all the way

to Carlisle, Pa., which, by the way, is quite a handsome, favorably-situated village. The first piece of information we obtain on our arrival is, that at the close of the last college year the trustees of Dickinson had passed a resolution declaring all the "chairs" vacant. The whole faculty, thus unceremoniously declared no faculty, including the president, managed to get restored, however, except three members. If we are correctly informed, these three were the best, or, as the matter was represented to us, "the least incompetent of all." One of them instituted an action against the trustees to test the validity of the whole proceeding; and the case was on trial the day of our visit. This struck us as rather ominous; nor did we think the circumstances were much improved, so far as the cause of education was concerned, when we learned that the claim of the professors to the right of being restored was recognized by the court, and judgment rendered accordingly.

Happening to meet at the hotel an intelligent gentleman of the legal fraternity, we received some hints from him in the course of conversation, which seemed to confirm the theory of degeneracy. "What do you think of the President?" we venture to ask. "Well, his intentions are good enough; but he has no energy—not a spark of enthusiasm. He used to be a preacher; but his utterance was bad; he drawled too much. His friends urged that he would make a good president for Dickinson. They happened to have influence; *voilà tout!*" Still we resolved to judge for ourselves. We found the President a quiet, unassuming gentleman. The Rev. Dr. McCauley showed us without hesitancy all we wished to see. We are most unwilling to make him the subject of a harsh remark; but, if a critic is chicken-hearted, as well might a chicken visit Dickinson or other institutions like it. This being our faith, we must say that we thought there was far too much superstition evinced during the recitation of Dr. McCauley's class in moral philosophy. Indeed, the whole performance reminded us far too forcibly of the well-known lines:

"Il vient; le *fanatisme* est son horrible nom;
Enfant *dĕnaturé* de la religion;
Armé pour la défendre, il cherche à la *détruire*," etc.

But it is our habit in such cases to give a small scrap of Latin or Greek; nor is it in any pedantic spirit we do so. We have generally two reasons for it: one is, that we are unwilling to cause too deep, or too *sudden* a blush; the other, that students take up their dictionaries and grammars much more readily to translate such *morceaux* as we give, than what they find every day in their text-books. With this little preface we beg leave to transcribe, without note or comment, from the old Heathen bard, for the benefit of the Dickinson Christian Divine, the following couplet:

ἐχθρος γάρ μοι κεῖνος ὁμῶς Ἀΐδαο πύλῃσιν
ὅς χ' ἕτερον μὲν κεύθῃ ἐνὶ Φρεσίν, ἄλλο δὲ εἴπῃ.*

Since this was the first recitation we heard at Dickinson, it may be supposed that we were not in a frame of mind favorable to a high appreciation of the work of the other professors; but it should be remembered by our readers that we are naturally of a sanguine turn. At all events, we entered the other class-rooms, one after the other, as directed, fully prepared to admire whatever seemed, in our humble judgment, to deserve admiration. We heard recitations in Greek and Latin, but, alas! we cannot say that either even reached mediocrity. We certainly indulge in no exaggeration when we say, with regret for Dickinson, that we have heard vastly better at preparatory schools, female as well as male.

At Dickinson, as well as at certain other Pennsylvania institutions of lofty pretensions, the cash seems to be a potent element in the matter of advancement to high classes and honors. The following extract from the catalogue may serve as an illustration:

"When admitted to an advanced class, a *fee of* $5 *is charged for each year's advancement*, except when the student comes from another college."—p. 16.

That students may be Bachelors of Arts at Dickinson as

* *Iliad*, ix., 312.

at the University of Pennsylvania "who know little Latin and less Greek"—that, in fact, they may do pretty much as they like and still obtain academical honors under certain circumstances, so as to become "leaders and guides of their fellow-men"—seems also to be "fully provided" in the catalogue before us, for it informs us that

"Those who *go through* any of the prescribed special courses, ***as they may elect***, shall be graduated *Bachelor of Arts equally with those who complete the classical course.*"—p. 17.

Then this sort of Bachelor, as well as any other, may obtain the degree of A. M. in due time without any further study, the only conditions being "a good moral character" and a fee of $5, paid *in advance*, to the President. It is hardly necessary to say that the "moral character" clause is a mere matter of form, but the money must be real—no money no degree—no trust for *Pater noster!*

None who know us need be assured that we are in no manner influenced in our judgment by the denominational character of Dickinson. Although we have unmasked some "strong Methodists," our pages, in several numbers, bear testimony to our high estimate of Methodist educators. In proof of the latter fact we need only mention such names as King, Brakeley, Cummings, Wilson. Not only have we fully proved that we are incapable of entertaining prejudice against the institutions of any Protestant sect, as such, the cheerful testimony we have borne, again and again, to the worth and efficiency of the principal colleges of the Christian Brothers is sufficient evidence that our feeling toward Catholic institutions is equally devoid of prejudice.

But when we saw Dickinson we had not yet seen the Wesleyan University. Although we had never heard a word in regard to the latter but what was in its favor, we resolved to visit it immediately after our return from the former, especially as we had more than once been courteously invited by its President to do so. We not only found the Rev. Dr. Cummings at his post, but most cheerfully ready to show us every department and every class in the University. And seldom

have we spent two or three hours more agreeably than we did in passing with the good President from one building, department, lecture-hall, and recitation-room to another, stopping a half an hour in one, twenty minutes in another, etc., until we had seen all, not excepting the astronomical observatory, which contains an excellent twelve-inch object-glass telescope (one that cost $9,000), a powerful spectroscope, an altitude and azimuth instrument, a repeating circle and sextant, and a fine astronomical clock.

Highly interested as we were in each department, the only drawback to our gratification was that we felt we were trespassing on the worthy President's time. More than once we expressed our regret for interrupting him to such an extent in the performance of his duties, but he as often kindly assured us that it only gave him pleasure to afford us every facility in his power to form an opinion of the educational resources and appliances of the institution, and of the results which it accomplished. That the former are ample is sufficiently evident from the "Historical Sketch" prefixed to the "Alumni Record;" and that the latter are good is equally manifest from the large number of the alumni who appear in the "Record" as having won honorable and distinguished positions in various professions and pursuits. Although the space prescribed for this article is already almost exhausted, we do not hesitate to extract the following passage from the Historical Sketch, feeling satisfied that there are none who value education for the beneficial influence it exercises, even on those not fortunate enough to be educated themselves, who will not be pleased in its perusal:

"Upon the resignation of President Smith, in 1859, Rev. Joseph Cummings, D.D., LL.D., President of Genesee College, was elected to the vacant post, and has filled it to this time with an ability that needs no mention here. Within the last decade, the material interests of the University have greatly advanced. During the years 1864–'65, a Library Fund amounting to twenty-seven thousand six hundred dollars was raised by the Alumni. The library is steadily increasing from the proceeds of this fund, and now numbers about twenty-five thousand volumes. During the Commencement week of 1868, a new and tasteful

library-building, capable of containing one hundred thousand volumes, was dedicated. This building was erected by the late Isaac Rich, at a cost of forty thousand dollars. During the same week, the contributions of Daniel Drew and Isaac Rich to the Endowment Fund were increased to one hundred thousand dollars each. In the fall of 1868, the old 'Boarding Hall' was remodeled and transformed into 'Observatory Hall,' by the addition of a handsome tower, in which was placed one of Alvan Clark's finest refracting telescopes. The Commencement season of 1871 was rendered memorable by the dedication of two new and beautiful buildings. The one, the Memorial Chapel, was erected at a cost of about seventy thousand dollars, in memory of those alumni and students who fell in the war for the Union. The funds for the erection of this Chapel were mostly raised by general subscription during the centenary year, 1866. The other building was the Orange Judd Hall of Natural Science, erected during the years 1869–'71, at a cost of one hundred thousand dollars, and believed to be one of the most complete and elegant structures of its kind in the country. For this building, as well as for the gift of thirty thousand dollars to endow the chair of Geology and Natural History, the University is indebted to the munificence of Orange Judd, Esq., of New York, who will ever be remembered as one of the most faithful and generous friends of his Alma Mater."

We need not say that this is creditable to all to whom it relates; it is sufficient to remark that it contains no statement to the correctness of which we cannot bear testimony, both from personal observation, and from information obtained from disinterested, intelligent men, in whose integrity we have implicit confidence.

Such being our estimate of the Wesleyan University—most cheerfully acknowledging, as we do, that, in our humble opinion, its standard of education compares favorably with that of the best New England colleges of any denomination—it surely cannot be said that our inferior estimate of Dickinson is to be attributed to any prejudice against Methodists, whether "strong" or "weak;" and still less can it be said that we sneer at Dickinson as a Pennsylvania college—one of the wonderful class which, to use the memorable words of Provost Stillé, in his famous window-speech, "fit" the good people of that commonwealth to be "*the leaders and guides of their fellow-men*"*—since we most cheerfully acknowledge that no

* *Vide* N. Q. R., No. LI., p. 102, *et seq.* See also *Supplement* to "Window" article, No. LII.

New England college or university—and we have seen the best more than once at their work—has given us a higher impression of the creditable progress made within the last decade by our first-class American educational institutions than Lafayette College.

Finding, in glancing at our manuscript-pile, that we have scarcely any space left in this article, we are glad to remember that there is not much to be said of Rutgers College—hardly any thing which would not be time enough months hence. We are all the more sorry that we cannot speak highly of Rutgers' classical standard from the fact that all of its professors whom we happened to meet are modest, cultivated gentlemen who make no false pretensions. The Rev. Dr. Cooper is undoubtedly a sound Grecian. The recitation of his class in Homer interested us much. But most of the students must have come from preparatory schools of about the calibre of Peekskill Military Academy, Stamford Military Institute, East Greenwich Academy, etc. It is certain, at all events, that they were not "prepared" to understand the elementary principles of the Greek tongue, yet equally certain that Prof. Cooper is abundantly competent to explain and illustrate those principles. Thus, for example, no student in the class could tell whether more use was made of the participle, or the infinitive, in the Greek than in the Latin or English. Nor had any of them any definite idea of what the Greek owes to its article or its partitive pronouns, as compared to any other language, ancient or modern; whereas, the observations and suggestions of their professor rendered it evident to us that he was entirely familiar with the peculiar characteristics of Attic Greek.

We sincerely regret to say that still less did the Latin class please us; or, rather, still more did it surprise us. It was really painful to us to witness in a college, from which we had expected a different record, such translating of one of the simplest and most beautiful passages in Cicero. After we had heard this, the professor politely conducted us to the grammar-school, but, from motives of benevolence, we respectfully declined to witness any of the recitations there. Whether we were right or wrong, we thought that, since the College

recitation was such "hard" work, we could not expect much from the grammar-school.

Some of the students told us, with an expression of awe and reverence for such profound learning as Rutgers', that the President was conducting a recitation in Hebrew. As the door stood open, and we were invited to enter, we listened a few minutes, although quite aware that we—a mere editor, and not of the Jewish persuasion—were not expected to know any thing whatever of so mysterious and holy a language as that of our worthy first parents. Probably it was only owing to our ignorance that all we were able to see or hear was a lesson on the Hebrew *alphabet*, the letters of which were scrawled more or less awkwardly on the black-board. How long it would take the class to learn the whole alphabet at this rate—to distinguish the vowels from the consonants—or even *Cheth* from *Tav*, *Wav* from *Yod*, not to mention distinguishing *Holam* from *Shooraik*, etc., is one of the questions that puzzled us during the recitation. As for translating, or even reading, a word of Hebrew, we saw no such rash attempt!

Yet, of all the ancient languages studied at the present day, the Hebrew is one of the easiest; and there are but few modern languages so easily acquired. As for Latin or Greek, either is vastly more difficult, because vastly richer and more copious; nearly the whole vocabulary of the Hebrew, which has to be learned, being embraced in the Old Testament. Accordingly, Bishop Walton assures his readers that "*Three months are sufficient* to acquire a knowledge of the Hebrew." Martinus, another excellent authority, says: "The ease of acquiring a knowledge of Hebrew is such that a student will make *greater proficiency in it in one month* than in Latin and Greek *in a whole year*." This is no exaggeration of the fact, yet it is thought a great affair at some of our colleges to have an indifferent knowledge even of the Hebrew alphabet!

We find no fault, however, with President Campbell or his Hebrew; on the contrary, we are willing to believe that he knows much more about the Hebrew than his modesty permitted him to disclose on the occasion alluded to. In a word, our impression of Rutgers in regard to its standard is very

similar to our impression of Dickinson; but there is this important difference in favor of the former, that its professors are more straightforward and unpretending—in a word, more honest—than those of the latter. We would gladly speak approvingly of all if we could conscientiously do so. But those who do not like our views need not accept them. We offer no bribes for readers.

ART. VI.—1. *Philosophical Transactions of the Royal Society of London.*

2. *Mèmoires de l'Acadèmie des Sciences de Paris.*

3. *Astronomie Populaire.* By M. ARAGO. 4 vols.

THE individual masses which compose the physical universe, the forces which animate them, and the laws by which their forms and movements are regulated, together make the objects of investigation in the oldest and most sublime of all the sciences. The stars, which in most cases seem to the unaided eye to be fixed with respect to one another, early served mankind as marks by means of which the return of several important but regularly recurring phenomena of nature were prepared for somewhat in advance of their actual occurrence. The various objects and departments of this science have engaged the closest attention of the greatest intellects that our world has ever known; and to-day we see astronomy the most completely developed science of all those which have yet engaged the attention of the human mind. That wonderful instrument, the telescope, has not only extended the known limits of the material universe almost immeasurably beyond what the naked eye could perceive, but it has revealed to us the distances, the form, and the dimensions of the celestial bodies, as well as much of their physical construction. That powerful instrument of the human mind, mathematical analysis, has enabled man to reduce the phenomena of the heavens to known laws, so that the formulæ of physical astronomy comprehend not only the present but the past and the future state of the system of the world.

The sun is so large that the geometrical and mechanical centres of the solar system are both within his surface. The actual orbit of the sun within the planetary system is a rather complicated curve, described around the centre of gravity of the system, being the reflex, so to speak, of the orbits of all the planets. The nearest planet to the sun, whose existence is placed beyond a doubt, is Mercury. The next in order is Venus, then the earth, after which come Mars, one hundred and thirty-four asteroids, Jupiter, Saturn, Uranus, and Neptune. The mean distances of these bodies from the sun, omitting the asteroids, are, in the order above given, thirty-five, sixty-six, ninety-two, one hundred and forty, four hundred and ninety, nine hundred, eighteen hundred and fifty, and twenty-eight hundred and fifty million miles, respectively. Their periods of revolution are, taking the bodies in the same order, eighty-seven and a half, two hundred and twenty-four and a half, three hundred and sixty-five and a fourth, six hundred and eighty-six, four thousand and ninety-six, ten thousand and eighty-six, twenty-eight thousand, and sixty thousand days, respectively.

Among these bodies we may mention Mars, Jupiter, and Saturn, as members of the solar system, that are frequently written about. Mars is one of our nearest planetary neighbors, and, since his orbit is exterior to that of the earth, very many interesting facts respecting his physical constitution, and the conformation of his surface, have been made out.* But, while this is true of Mars, we must not forget that Venus is a still nearer neighbor to us, and is, besides, of much more importance to us, in the way of helping the astronomer to a knowledge of the distance of the sun from the earth, and thence to a knowledge of the dimensions of the planetary orbits, the magnitude of the visible universe, and of the bodies which compose it. Moreover, the beauty and brilliancy of Venus, when she is our morning and evening star, have served to cheer the minds of the poet and the astronomer in all ages of the world, since man began to make progress in the arts of civilized life.

* See N. Q. R., Art. VII.

The orbit of Venus being within that of the earth, the astronomer, armed with his telescope, has not been able to discover so many things which pertain to the surface features of that world, as in the case of some of the other planets; but, still, the facts which have been made known are not less interesting than many which have been revealed respecting Mars, Jupiter, and Saturn.

The date of the discovery of Venus as one of the planets—a wandering star—must be placed, it would seem, in prehistoric times. As the Evening and the Morning Star, Venus must have attracted attention at an early period in the development of mind. According to Laplace,* the Egyptians were acquainted with the fact that Mercury and Venus revolve around the sun, and, consequently, that the Morning and the Evening Star is one and the same body. It is said that Pythagoras thought so too; and Whewell says† that this is probably the earliest mention of that astronomical truth. We may remark that almost any attentive observer of the phenomena which Venus presents during a few years must certainly have arrived at such a conclusion.

The time of revolution of Venus around the sun, and also of all the planets whose existence was known before the invention of the telescope, was exactly known to the ancient astronomers of both Greece and India. According to the astronomy of the Hindus, the period of revolution of Venus around the sun was 224 days, 16 hours, 45 minutes, 56.19 seconds. According to Ptolemy, whose great work known as the *Almagest* contains the substance of the astronomy of the ancient Greeks together with the investigations which he himself made, the period of revolution of Venus was 224 days, 16 hours, 51 minutes, 56.8 seconds. According to the modern astronomers, the mean period of revolution of Venus is 224 days, 16 hours, 49 minutes, 7.99 seconds.‡

* *Syst. du Monde*, tome ii., p. 247.

† *Hist. Induc. Sci.*, vol. i., p. 149.

‡ See on this subject a translation of the Hindu astronomical work, *Súrya-Siddhánta*, p. 24.

The laws of physical astronomy make known the relation between the mean distances of the planets from the sun and their periods of revolution. If we compare the periods and mean distances of any two planets, we find a relation existing among them which is known as Kepler's *Third Law*, namely, that the squares of the periods of revolution are to each other as the cubes of the mean distances from the sun.* This relation, which Kepler discovered by comparing the periods and distances as they were known in his day, enables us to find the mean distances of all the other planets from the sun when any one of them is known; and, by assuming the mean distance of one of the planets, as that of the earth, equal to unity, we readily find the mean distances of all the others in terms of this unit, since the periods of revolution are readily found from observation. It is in this way that the mean distances of the planets are usually put down in synoptic tables in astronomical works. As soon as we know the mean distance of the earth from the sun in miles, or some other known unit, we can find that of any other planet by simple multiplication. Since the approximate distance of the earth from the sun has been known for only about two hundred years, the planetary distances have been known only for that length of time. Thus, it will be seen that, while the knowledge of the ancient astronomers respecting the times of the revolutions of the planets was very exact, their knowledge of the actual distances was extremely limited.

According to the recent determinations of the sun's distance from the earth, the mean distance of Venus from the sun is equal to 66,131,000 miles. The eccentricity of the elliptic orbit of Venus is small, so that her greatest distance from the sun is 66,586,000 miles, and her least distance is 65,677,000. This gives an extreme variation of only 909,000 miles. These numbers have not always correctly represented the extreme variation of the distance of Venus from the sun, since the eccentricity of her orbit is subject to a slow variation, caused

* *Harmonices Mundi.* See, also, Brewster's *Martyrs of Science*, for an account of Kepler's discoveries.

by the attraction of the other planets of the solar system. According to the investigations of Mr. Stockwell, in the year 4550, B. C., the variation of distance amounted to 1,378,000 miles. This variation is still diminishing, as it has been for many centuries, and as it will continue to be for many centuries to come. At some period in the course of future ages the variation of distance will cease to exist, or the orbit will become a circle.* The greatest variation may amount to 9,342,000 miles.† We thus see that the present small eccentricity of the orbit of Venus is not due, so far as we can see, to any mode of genesis of the solar system, but rather to the mutual gravitative influence of the different members of the system.

The inclination of the orbit of Venus to the fixed ecliptic of 1850 is 3° 23′ 33″. The inclination is gradually diminishing at present, and it has been since the year 550 A. D. The greatest value to which the inclination may attain is 4° 51′, and the least 0° 0′.‡ The longitude of the perihelion of the orbit is at present 129° 28′ 50″; and the longitude of the ascending node of the orbit is 75° 16′ 33″. Both these elements are subject to a slow variation dependent on the mutual attraction of the members of the solar system.

The greatest distance of Venus from the earth at present amounts to 159,551,000 miles when she is in her superior conjunction; and the least distance from the earth at present is 23,309,000 miles, when she is in her inferior conjunction. When we take into consideration the variation of the eccentricities of the orbits of the earth and of Venus, and the change in the position of their perihelia, it is possible for Venus and the earth to approach at some very remote period within 14,284,000 miles. The greatest apparent diameter of Venus, then, as seen from the earth, would equal 101″; and, for some time before and after the period of infe-

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* See Stockwell's *Memoir on the Secular Variation of the Elements of the Eight Principal Planets*, p. 188, and p. 11 Smith's *Con. to Knowledge.*

† *Id.*, p. 11. ‡ *Id.*, p. 11.

rior conjunction, the Evening and the Morning Star would shed upon the earth a considerable degree of light, and to the inhabitants of Venus, should there be any then, the earth would serve as a brilliant moon. Such a coincidence as we have supposed can only occur millions of years in the future. At present the greatest apparent diameter of Venus is 62″ and the least 9″.5.

Even now, when Venus is favorably situated, and especially at the period of greatest brilliancy, which occurs when she is about 40° distant from the sun, either before or after her inferior conjunction, she may be seen at noonday with the naked eye; and at such times she is so brilliant as to cast a pretty strong shadow. In this situation we have seen her shine through a window so as to show the image of the window as plainly as the new moon does. Sir John Hershel says that he has sometimes seen the diffracted fringes bordering the outline of the shadow which she casts on a white ground.* Mr. Weston speaks† of seeing a shadow which Venus cast on a brownish-white background (March 15th, 1868), some three months before her period of greatest brilliancy (June 9th). The light above the horizon and the clearness of the atmosphere have much influence on the amount of light which we receive from Venus. At the period of greatest brilliancy Venus has an apparent diameter of about 40″, and the greatest breadth of her illuminated phase, or the part of the illuminated disk, which she turns toward us, is only 10″.‡

The absolute magnitude of the planet Venus becomes known when we know her apparent diameter and distance from the earth at any moment. From these data it has been found that the equatorial diameter of Venus is 7,510 miles. The law of gravitation requires that the polar diameter be less than the equatorial, though the difficulty of determining any

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* *Outlines*, Art. 467.

† *Monthly Notices R. A. S.*, vol. xxviii., p. 180. We have seen the constellations Orion and Canis Major cast a distinct shadow.

‡ Littrow's *Theoretische Astronomie*, Th. ii., p. 68.

difference of the diameters from observation is so great that it is not certain that any has ever been found. The magnitude of Venus, as we see, is but little less than that of the earth, the difference in diameters being only about four hundred miles.

The mass of this planet, or the quantity of matter which she contains, is somewhat less than that of the earth, it being 785 if the earth's be taken at 1,000. There is great difficulty in determining the mass of those planets which have no satellites. It can be done only by means of the influence which each one exerts on the motions of the other heavenly bodies; and, since this influence at most is but small, owing to the immensely superior force of the great central luminary, it is necessary to select as the body whose motions are disturbed that which approaches nearest. In some instances the passage of a comet, whose orbit is pretty well known, near one of the planets, furnishes data sufficiently accurate to make known a very satisfactory value of its mass. This is the case with Encke's Comet which passes, when near its perihelion, in the neighborhood of Mercury at some of its returns. The mass of Venus has been determined, from the perturbations which she produces, by Delambre, Burchardt, and Airy.* When the volume and the mass of a planet are known, the mean density is implicitly known. If we call the mean density of the earth 100, that of Venus is 92, according to accepted data; but, owing to the uncertainty still attaching to the mass of Venus, there is some theoretical probability that the density is greater than we have given it.

Some observations by several astronomers indicate that Venus may possibly be attended by a small satellite. Should such a body finally be discovered revolving around that planet, observations upon it would furnish more accurate data for determining the mass of Venus. M. Cassini was the first astronomer that saw an object near Venus, which he thought might be a satellite. On the 25th of January, 1672, while

* *Connaissance des Temps*, 1816; *Mémoires de l'Institut*, 1812; *Phil. Trans.*, 1828.

looking at Venus in the morning, he saw a small object near the planet, horned like Venus, and of a diameter nearly one-fourth that of the primary. On the 18th of August, 1686, also in the morning, he again saw, with a thirty-four foot telescope, what appeared to be the same object seen on the former occasion. Venus and the supposed satellite were both of a gibbous phase at that time. On the 23d of October, 1740, Mr. Short, the well-known optician, saw a small star near Venus, with a small reflecting telescope, to which he applied the powers sixty, two hundred and forty, and one hundred and forty. With the two higher powers the star appeared of the same phase as Venus. It appeared to be of about one-third the diameter of Venus.* In May, 1761, Mr. Montaigne saw what he considered to be a satellite of Venus, of about one-fourth the diameter of the primary and of the same phase. Several other observers have also seen it. The observations to which we have referred are too numerous, and they were made by observers of too much ability to be set aside as due to some defect of the instruments employed, or to some physiological peculiarity of the observer. Negative testimony in this case is hardly sufficient to overbalance the facts to which we have referred, though it comes from such eminent astronomers as Schröter and Sir William Herschel, who were never able to perceive any satellite. During the transits of 1761 and 1769, there were only two observers who saw any object that might be taken for a satellite of Venus. It is possible to settle this question about the satellite of Venus if some of the observers, who have the use of the large and accurate instruments now in existence, were to give their attention to this matter.

M. Lambert collected the observations upon the supposed satellite, and calculated an orbit for it which consistently represented the various observed positions of the body. He found the time of revolution to be eleven days five hours thirteen minutes, and the mean distance from the centre of Venus equal to 255,000 miles.† The most fatal objection to

* *Phil. Trans.*, 1741. † Bode's *Jährbuch* for 1777.

this orbit is the great mass (ten times that found by other methods), which it requires for Venus.

The first inventor of the telescope, so far as history informs us, did not direct it toward the planet Venus to see what revelations she had to make to man. Galileo, himself an inventor of that wonderful optical instrument, was the first that directed the telescopic tube toward the star of evening; and, upon examining it when near her inferior conjunction, he was not a little delighted to see her exhibit the crescent phase of the moon. This he did in 1610, in the month of February.* "It had always been a formidable objection to the Copernican theory that this appearance of the planets had not been observed. The author of that theory had endeavored to account for this, by supposing that the rays of the sun passed freely through the body of the planet, and Galileo takes occasion to praise him for not being deterred from adopting the system which, on the whole, appeared to agree best with the phenomena, by meeting with some appearances which it did not enable him to explain."† It is stated by Thomas Smith,‡ though the truth of the statement is very doubtful, that Copernicus predicted the future discovery of the phases of Venus. Since he entertained the idea of the transparency of the planet, we must conclude that his views in relation to this important point of his theory of the system of the world were neither very definite nor satisfactory. Galileo's telescope, however, forever cleared away all doubts in relation to the matter, and showed that, if the apparent magnitude of Venus were sufficiently large, she would exhibit her phases to the unassisted eye.

The great brilliancy of Venus not only prevents us from readily perceiving the phases which she presents, even when we use a small telescope, but it has hitherto been found a serious obstacle in the way of discovering many facts relating to the physical conformation of her surface. In order to de-

* Humboldt's *Cosmos*, vol. ii., p. 708.

† *Hist. Ind. Sci.*, vol. i., p. 416.

‡ *Optics*, Sec. 1050.

termine the period of rotation of the planets, it is necessary to discover some object which is immovably attached to their surface. There has been no little difficulty in doing this in the case of Venus. After the discovery of the phases, nothing further was perceived on the disk of Venus for more than half a century. At length the celebrated Cassini, while residing under the clear sky of Italy, saw, on the 14th of October, 1666, a bright spot near the limits between the dark and the light side of the planet, not far from its centre; and also two dark oblong spots near the west side of the disk. No more satisfactory views were obtained till April 20th, 1667, when he saw upon the disk, now half enlightened, a bright spot about a fourth of the diameter from the southern edge. A darkish spot was also seen toward the northern edge. He continued his observations sufficiently long to perceive evident proofs of the rotation of the planet. The observations were continued the next day, and he finally arrived at the conclusion that the planet rotates in about twenty-three hours.*

Sixty years elapsed from the date of Cassini's observations before any further observations were made. At length, in 1726, Bianchini, a domestic prelate of the Pope, commenced, at Rome, an examination of Venus with a powerful telescope of Campani's construction. He soon succeeded in perceiving some dark spots on the surface of the planet, the motion of which he followed for some time with close attention. The continuity of his observations was interrupted by the interposition of the Barbarini Palace, so that, when the observations were resumed on the following day, he found the spots advanced about 15°. From this he concluded that it required 24 days 8 hours for the planet to revolve on its axis.†

Jacques Cassini, son of Dominique Cassini, in 1732 subjected the observations upon the rotatory motion of Venus to a critical discussion. By taking into consideration the chasm

* *Journal des Savans*, tome i., p. 216. *Mem. Acad. Sciences.*

† Delambre's *Hist. de l'Astron. au dixhuitième siecle*, pp. 256–258, and *Hesperi et Phosphori nova Phenomena*, a work which contains an account of his observations.

in Bianchini's observations, he was able to satisfy both his father's observations and those of Bianchini with a period of rotations equal to 23 hours 20 minutes; but, if he adopted the longer period of 24 days 8 hours, his father's observations were wholly worthless.*

In the year 1789, the celebrated Schröter, of Lilienthal, made a series of observations on Venus with a seven-foot reflector, and his conclusions respecting the period of rotation were a complete conformation of the result deduced by the younger Cassini. He saw a luminous point in the dark hemisphere of Venus, a little beyond the southern horn, which appeared blunted, and, by continuing for some time to direct his attention to the periodic changes in this object, he deduced both the height of the mountain (twenty-two miles), whose summit was illuminated, and the period of rotation of the planet, which he fixed at 23 hours 21 minutes 19 seconds. In 1700, La Hire had noticed some sensible irregularities in the crescent of Venus, as we see in that of the moon, though not so apparent. "Some irregularities (dentilures) at the distance of Venus," says Arago, "was an extraordinary phenomenon."† Though we could hardly admit that mountains of such extraordinary heights exist on Venus, yet we must conclude that they are much more elevated than those of our satellite.

In 1839 the late Sig. De Vico and the other astronomers of the observatory of the College of Rome commenced a series of observations on Venus with a fine refractor by Cauchoix. Owing to the intense lustre of the planet, they followed the plan formerly pursued by La Hire,‡ of observing Venus in the day-time. The spots formerly found by Bianchini were soon re-discovered with all their previously observed forms, from which we conclude, contrary to Sir William Herschel's opinion, that they are not in the atmosphere of the planet but belong to the surface. The result to which they

* *Élémens d'Astronomie*, p. 526.

† *Annuaire*, An. 1842, p. 535.

‡ *Mem. Acad. Sci.*, tome x., p. 20.

finally arrived was that the planet rotates in 23 hours 21 minutes 21.93 seconds.*

The great height of the mountains of Venus, according to the conclusions of Schröter, are not required, as stated by Humboldt,† to explain the appearances which the horns of the crescent of Venus present, "but merely elevations like those which our planet presents in both continents."

We have already mentioned that Sir William Herschel supposed the spots which can be seen on the disk of Venus to be atmospherical phenomena. He commenced his observations upon the planet in 1777, his aim then being to determine the period of rotation; but his results were unsatisfactory to himself, and he did not publish them. In 1792, however, Schröter communicated to the Royal Society of London a somewhat extraordinary paper on the mountains of Venus. This memoir appears to have had the effect to draw Herschel's attention to the subject once more, and he published a memoir the following year.‡ It had generally been remarked by observers that that part of the disk of Venus toward the sun is more brilliant than the opposite part, or that next to the line separating the dark from the illuminated part of the surface. On this point Schröter and Herschel agreed, only the former thought he saw a gradual diminution of light from the one side to the other, whilst the latter believed that there was an abrupt diminution from all the points in the circular outline of the disk, or that part next the sun. This contour appeared to him as a kind of luminous collar of equal width throughout the whole extent of the semicircle. Herschel has given this explanation of the phenomenon: It is to be attributed to an atmosphere of Venus; this atmosphere, like that of the earth, is probably filled with matter which refracts and reflects the light in all directions in abundance. Consequently, on the border of the disk where a visual ray meets the atmosphere obliquely, or in its greatest thickness, it ought to present

* *Cosmos*, vol. iv., p. 475. † *Ib.*

‡ *Phil. Trans.* for 1793.

there an apparent increase in brilliancy. This explanation, however, is not altogether satsfactory, since it is difficult to see how the exterior outlines of the disk could be so well defined as it is.

Schröter found evidence of an atmosphere of considerable extent in phenomena connected with the horns of the crescent of Venus when near her inferior conjunction. On the 12th of August, 1790, he found the horns of the crescent extending together eight seconds beyond the semicircle.* Dr. Dick speaks† of having noticed the same phenomenon March the 11th, 1822, while observing Venus in the day-time. Schröter concluded from his observations that the denser part of the atmosphere of the planet is at least three miles in height, the horizontal refraction being about 30′ 34″, or nearly the same as that produced by our atmosphere. Sir William Herschel's observations‡ also confirm the conclusions of Schröter in relation to the crepuscular light of Venus. Several of the observers of the transits of Venus over the sun's disk in 1761 and 1769 saw the planet surrounded with a faint ring of light similar to what would be occasioned by the passage of the solar rays through a circumambient fluid. Some further observations upon Venus, presently to be mentioned, also show the existence of an atmosphere surrounding that planet.§

We have already mentioned the fact that some observers have made observations on Venus in the day-time. This method offers many advantages. Since this planet is never at a greater apparent distance from the sun than about 48°, and usually much less than that, she is often involved in the mists of our atmosphere when observations are made upon her in the evening or the morning. Again, the great amount of

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* *Phil. Trans.*, 1792, and *Annuaire*, 1842.

† *Celestial Scenery*, p. 35.

‡ *Phil. Trans.*, 1793, p. 214 ; *Annuaire*, 1842, p. 540.

§ The observations of the late Professor Mädler make the horizontal refraction of her atmosphere one-sixth greater than that of the terrestrial atmosphere.—(*Hind's Solar System*, p. 36.)

light which she reflects * is so dazzling if observed when the sun is below the horizon that it is difficult to determine the exact outline of her disk. These considerations led Dr. Dick, at different periods in his life, to make numerous day observations on Venus, from which he deduced several important results. His first observations were made in 1813, and he showed that Venus can be seen, when very near her superior conjunction, contrary to what was generally supposed. These observations were again continued in 1819. In 1822 he made a series of observations to determine how near her inferior conjunction Venus may be seen. In both cases he found that she may be seen with a telescope when very near the sun.†

On the 11th of December, 1866, Venus passed her inferior conjunction, her apparent place being in close proximity to the sun's, being only 22′ from his northern limb, so that a transit would have occurred had the conjunction happened a day earlier. Though there was no transit, yet the near approach to one offered the astronomer the advantage of observing Venus when only a very slender crescent of her illuminated disk was turned toward the earth. The conjunction was observed by Professor Lyman, of the Sheffield Scientific School, with a fine nine-inch refractor. Owing to the intensity of the sunlight, the nearest approach of the planet to the sun could not, or rather was not observed. On the preceding day, when Venus was only 1° 8′ from the sun's limb, she was seen, and her position measured. The planet was observed some days before the conjunction, and it was quite apparent that her crescent formed more than a semicircle; on the 7th 40° more by measurement. "On the 10th it formed a *complete circle*, bright, thin, and delicate (the crescent proper), on the side toward the sun, but on the opposite side a mere faint line of light, very difficult to be seen on account of the strong light in the field and the atmospheric

* According to the observations of M. Chacornac, Venus reflects ten times the amount of light from the same amount of surface that the moon does.—(*Comptes Rend.*, lviii., and *Les Mondes* of July 20, 1865.)

† *Celestial Scenery*, chap. iii.

disturbance." By glimpses it was distinctly seen as a ring by several observers, and constantly as more than three-fourths of a circle. Similar appearances were seen on the 12th, the day after the conjunction. The sunlight interfered very much with distinct observation. On one occasion a passing cloud obscured the sun for a few seconds and left the planet in view. "The background was then comparatively dark, and the thread of light around the limb opposite to the sun perfectly distinct and complete." Professor Lyman says that the northern portion of the crescent proper did not diminish uniformly in brightness, nor in thickness, toward the crisp, but between 25° and 50° from the vertex toward the left, by estimation, it was perceptibly fainter than a like portion of the circumference toward the right, and thence diminished to the fine thread of light before mentioned.*

The facts to which we have just referred obviously have a direct bearing on the question of an atmosphere surrounding Venus. It would seem that these observations prove conclusively that there is an atmosphere of considerable extent. Had the breadth of the atmospheric ring been measured, we could have calculated the height of the principal part of the atmospheric envelop.

It has already been mentioned that the great brilliancy of Venus interferes very considerably with accurate observations upon the outline of her disk, and consequently with the exact determination of her position with respect to the fixed stars. Since she is the nearest to us of all the primary planets, if her position could be exactly determined from places widely separated on the earth, her parallax would thus become known, and this would make known her distance from the earth at the moment of observation, and then the distance of the earth from the sun could be calculated. When Venus is at her inferior conjunction she is comparatively near to us, and her parallax is about three and a half times that of the sun, or about 32″. When she is but little removed from her inferior

* *American Journal of Science* [2], vol. xliii., pp. 129, 130.

conjunction, her parallax would be but little less than that amount. If it were possible to measure the difference between the limbs of Venus and the sun at such times with great accuracy, the results would make known her parallax if the measures were taken at widely separated places on the earth at the same time. Now, we suggest that, though such a thing would be very difficult if not impossible at present, yet it is so because the attention of astronomers has not hitherto been turned in this direction. For many years it was thought to be necessary—and it was then—to wait for a total eclipse of the sun to observe the solar protuberances. Now, as we know, they may be observed at any time when the sun is visible. Now astronomers wait for transits in order to observe the position of Venus with respect to the sun. These occur but seldom, and it requires a great outlay of means to observe them. We now invite the attention of astronomers to this other problem, and let us see if man's ingenuity, combined with Nature's resources, is not equal to the problem which we have proposed.

A transit of Venus over the sun's disk happens whenever she is near one of the nodes of her orbit at her inferior conjunction. These coincidences do not occur very frequently. If a transit occurs at either node, the relation of the periods of revolution of Venus and the earth is such that the transit will be repeated either at the end of eight years or two hundred and thirty-five years. If it is repeated at the end of eight years it will not recur again till the end of the other period. But during this period transits will occur in the same order at the other node; so that, as a general rule, transits will occur in the following order: 8, 122, 8, 105, 8, 122, &c., years, so that they pass through a complete circle, according to the present arrangement, in two hundred and forty-three years. The transits of Venus occur now in the months of June and December, those at the ascending node in the former month and those at the descending node in the latter month. Since the line of nodes is slowly shifting its place, the months in which the transits happen will, in the course of time,

change. After the transit which will occur in 1882 no other will happen till one hundred and twenty-two years elapse, so that none will take place in the twentieth century. On the 7th of June, in the year 2004, a transit will occur at the ascending node.

Astronomically speaking, the great use of the transits of Venus is to measure her parallax, and from this to calculate, from the known laws of physical astronomy, the distance of the earth from the sun. The value in miles, or some other known measure, of the distances and the magnitudes of all the celestial bodies, except the moon and some meteors, is deduced from the accepted value of the earth's mean distance from the sun. Hence we see the great importance to the astronomer of such celestial phenomena as enable us to approximate still more nearly to the true mean distance of the sun from the earth.

It is barely possible that Venus at some of her former transits,* previously to the invention of the telescope, was seen on the sun's disk. Solar spots have unquestionably been seen without the telescope;† and, since Venus could thus be distinguished during the transit in 1761, there is a possibility, though but little probability, that Venus may have been noticed at some of her earlier transits. However this may be, the first observed transit of which we have any account was that of 1639. Kepler had predicted in 1629 that a transit of Venus would occur in 1631. He also stated that another transit would not happen before the year 1761. This statement did not prove to be correct, though its truth was generally accepted by the astronomers of that period. Gassendi, who had just (November 7th, 1631) observed the transit of Mercury, which was also predicted by Kepler, made an effort to observe the transit of Venus, which was to occur, according

* Transits have occurred as follows: 1769, 1761, 1639, 1631, 1526, 1518, 1396, 1388, 1283, 1275, 1153, 1145, 1040, 1032, 910, 902, 797, 789, 667, 659, 554, 546, 424, 416, 311, 303, 181, 173, 68, 60.

† *Annuaire*, 1842, p. 460.

to calculation, on the 6th of December, 1631. He watched the sun's disk diligently for several days, but he was unable to discover any traces of the planet on the sun's disk. It is now known that the transit occurred during the night of the 6th and the 7th of December, and hence was visible in some other part of the world.

Only two individuals had the satisfaction of witnessing the transit of 1639, which occurred on the 24th of November, O. S. These persons were Jeremiah Horrocks and William Crabtree, two young and enthusiastic astronomers that resided in the north of England. Horrocks was led to the discovery that a transit would occur at the time which we have mentioned, by calculating the places of the planet by means of Lansberg's tables of the motion of Venus. These tables, which their author boasted of as extremely accurate, Horrocks complained of as extremely inaccurate; but Kepler's Rudolphine tables were entitled to the praise, he said, which Lansberg bestowed on his own. But it was Lansberg's tables which led Horrocks to his grand discovery. At Venus's inferior conjunction, Kepler's tables placed the planet a little *below* the sun, while the others made it pass over the sun's disk near the upper part. From these results and his previous calculations, he concluded that the planet would actually pass over the sun's disk near the lower part.

Horrocks commenced his observations of the solar disk on the 23d, and continued it during the 24th, till religious duties called him away.* At a quarter past three o'clock in the afternoon, he returned to his observations, and had the satisfaction of seeing Venus already entered on the disk of the sun. The near approach of sunset prevented him from observing the planet for more than half an hour. Owing to cloudy weather, Crabtree got a glimpse of the sun and the planet only a few moments before sunset, but he saw Venus in her transit. The 24th was Sunday, but the religious duties of

* Ragavel's *Correspondence of Eminent Men of the Seventeenth Century*, vol. ii., p. 112.

these young men did not prevent them from giving some attention to extraordinary phenomena of nature.

The transits which occurred June 5th, 1761, and June 3d, 1769, were taken advantage of by astronomers, who were urged to do so by Dr. Edmund Halley, for measuring the parallax of Venus. The English, French, Russian, and Danish Governments sent expeditions to different parts of the world to observe the transits, and their several observations were discussed by the late Professor Encke, and the result which he derived for the value of the solar parallax has been the accepted value among astronomers until recently. Several other methods gave a larger value of the solar parallax. In 1868, Mr. E. J. Stone, of the Royal Observatory, England, at that time, but now of the Cape of Good Hope, published* the result of a new discussion of the observations on the transit of 1769, and he arrived at a result corresponding almost exactly (8″.91) with that deduced by other methods. We need only remark that observers who have been sent by the several enlightened governments—Russian, German, French, English, and United States—have all the facilities for observing the transit of the present year that means and skill could suggest.

When the planet enters on the sun's disk, and when it leaves it, a somewhat curious phenomenon makes its appearance. A black drop, or a sort of ligament, seems to connect the edges of the two disks, and it becomes very difficult to decide exactly when the edges or limbs of the sun and planet are in contact; and, as this is a very important observation, a small degree of uncertainty attaches to the results which the observers give. Every effort will be made to obviate all uncertainty and error of this kind; and we can but hope that the various contrivances which have been devised will reduce the errors naturally attending such delicate, yet very important, observations to a minimum. The cause of this black drop, as it has been called, is not thoroughly understood, but

* *Monthly Notices, R. A. S.*, vol. xxviii., pp. 255–266.

it seems to be due to irradiation and to the atmosphere of Venus.* The discussion of the various questions which have arisen is of high importance to the astronomer, but it would possess less interest to the general reader.

The question of the habitability of Venus as well as that of the other planets has arisen, and it has been discussed by able writers, both affirmatively and negatively. Recently Mr. Proctor has attempted to show that the probability is small that any other body than the earth is inhabited; and it is quite possible that he would doubt the habitability of the earth if he did not happen to see that it is. How it should so happen that, at this time in the age of the universe, none of the planets but the earth is adapted to sustaining life, especially since several of the planets, at least, appear to possess many of the appendages and other things which the earth possesses, is not apparent. We frequently see it quoted by newspapers that Mr. Proctor has shown that the planets are not fitted for inhabitants, and if we admit that the worlds are as he supposes them to be the probability is that they are not.

ART. VII. *Catalogues and Circulars of Schools, Academies, and Seminaries, embracing all grades.*

BEFORE devoting any attention to these various documents, or to the institutions which they represent, we beg leave to remark that it is not inane, pretentious teachers alone who are to blame for the deplorable defects in our educational system, which, without the least inclination to be harsh or unkind, we criticise and expose. The more cultivated portion of the public have not the faintest idea of the extent to which

* On the subject of *irradiation*, see an article by the Abbé Moigno, *Smithsonian Report*, 1866, p. 232.

parents and guardians deserve to partake of the odium, because that class know better than to behave tyrannically toward the instructors of their sons and wards. But, unfortunately, there are a large class who think that because they pay their money they have a right to dictate to those who receive it.

Those best known in society by the prefixes "purse-proud," "shoddy," etc., affect to have no respect for rules or regulations, and seem to take a pleasure in causing the violation of both. This we could illustrate by numerous examples. We mean to do so in an article devoted exclusively to that subject; but in the present paper we can only allude to the evil, serious and fundamental as it is.

Competent educators are generally spirited as well as honest, and therefore will not submit, for pecuniary gain, to be dictated to or bullied. Some of the consequences are obvious enough. Pupils are withdrawn from those who have the abilities and the wish to instruct them, and placed in the hands of those who have neither the abilities nor the wish to give them any instruction that will avail them in after life. Another class have also plenty of money, but no heart to make judicious use of it. These select their teachers as they do their tailors, or shoemakers, for their cheapness. Hence it is that we frequently find excellent schools with only a small number of students, while just as often we find execrable schools crowded to overflowing.

We occasionally allude to the high prices charged at some institutions, and comment on their "extra charges." But in no instance have we meant that a good educator is paid too much, for no one is so ill paid in proportion to the value of the services he renders. "A nation," says Zoroaster, "that grudges to reward its instructors, deserves to be ignorant, and ignorance is the high-road to degeneracy and contempt." It was in vindication of the same sentiment that the Athenian sage, who had spent his life in teaching, full of grief at being neglected in his old age, exclaimed, "Ah, Pericles, those in need of a lamp should take care to supply it with oil!"

With these few remarks as a preface, we proceed to give

some outlines of different grades of institutions just as they have impressed us by their respective systems, or other performances. Preferring to begin as well as end our discussion in as agreeable a manner as is consistent with justice and truth, we first direct our attention to an educator whose worth is acknowledged even by his rivals.

Prompted by the fame of the Rev. Dr. Holbrook's Military School at Sing Sing, it has long been our wish to see it. Since the principal favored us with an invitation more than once, the only obstacle has been the difficulty of finding time. This we managed to set aside some two weeks ago, and, high as our expectations had been, they were more than realized. We had long known from experience that those who invite criticism are as sure to perform their work intelligently and faithfully, as we had that those who would exclude criticism only *pretend* to perform theirs; and our recent visit furnished an interesting and forcible new illustration of the former fact. We had never seen the Rev. Dr. Holbrook before, although his experience as the principal of a classical school has extended to nearly a quarter of a century, including the nine years during which he has conducted his present institution, elevating it to the highest rank among the preparatory class.

The Holbrook Military School is very favorably situated. It is about one mile from the village, occupying an eminence which commands an extensive view of the Hudson where that noble river is most picturesque in its scenery, and most classical in its traditions and history. The buildings are well adapted for their purposes, and possess ample conveniences and appliances, having in view the physical as well as the intellectual welfare of the students. It has also the advantage of extensive play-grounds, with which is connected a gymnasium, so spacious and well equipped that the most stormy weather need not interrupt any necessary or attractive exercise.

And then those stalwart trees, with their wide-spreading branches, adorning the lawn, the shrubbery fringing the background, and the rippling brooklets in the distance, may well

remind the classical student, under the guidance of Dr. Holbrook, of the attractions held out by charming old Maw in his first Eclogue—

Ipse te, Tityre, pinus
Ipsi te fontes, ipsa hæc arbusta vocabant.

As at Mount Pleasant Military Academy in the same village, and the Riverview Academy at Poughkeepsie, the military department at Dr. Holbrook's School is designed not for training soldiers, but as a means of physical discipline. The principal of the latter institution agrees with those of the two former that "It is found to be promotive of habits of order and obedience, and thus facilitates mental processes and studious habits," and we cheerfully admit that our experience and observation during the past year, combined with the assurances we have received on the subject from other accomplished and successful educators, satisfy us that the statement just quoted from Dr. Holbrook's catalogue proves in general correct. Nor is there any thing in this admission which is in the least inconsistent with our criticisms on certain "military institutes," "military academies," etc., since what we denounced and exposed to public ridicule was not the military drill, but the too transparent cloak made of it for concealing ignorance and imposture.

Referring to the classical department we need give no details; it will be sufficient for us to say to those in the habit of reading our educational discussions that it ranks with that of the best preparatory institutions whose peculiar merits we have sought to indicate as constituting models, which many concerns claiming to belong to the same class would do well to imitate. In a word, the Holbrook School has many features which remind us of those of the Selleck School at Norwalk, and higher praise than this we could not bestow on any American preparatory institution.

Everybody has heard of a seat of learning in New York city, alternately styled "Charlier Institute," "Charlatan Institute," "French and English Institution for Young Gentlemen," etc. Several years have now elapsed since we were

first requested by parents, guardians, and others interested in education, to visit this school and give our impressions of its character. Some three years ago we concluded to make the effort. We wrote a polite, friendly note to the head-master, inquiring whether he will allow us the privilege of seeing his institution. In reply we are informed there is no objection, or any thing of the sort, but we must come on a certain day and hour; otherwise we cannot be received again for some weeks; and, moreover, young gentlemen belonging to the high class, who patronize the Institute, are "bashful at their lessons." Having only a few weeks previously spent several hours in the class-rooms of Columbia College (to which we were conducted by the Rev. Dr. Barnard, who afforded us ample opportunities to hear the recitations of his various classes), we could not help smiling at the "high class" bashfulness of the "French and English Institution for Young Gentlemen."

We were well aware that there is no higher class in New York than those who send their sons to Columbia, and equally aware that those sons had no bashfulness that would prevent them from reciting just as well in our presence as in our absence. It struck us as significant, at the same time, that of all the schools of New York of any grade, male or female, that we evinced any desire to visit, the Charlier Institute alone manifested its unwillingness. Nor have we a different experience to-day, three years later; for if there are any others, male or female, claiming a respectable rank, who would object to our seeing their classes, we are not aware of the fact; but, judging from the cheerful courtesy with which we have always been received by those whose schools we cared to see, we do not believe there are any such, always excepting those under the control, direct or indirect, of our good friends the Jesuits. At all events, we conclude not to disturb the bashfulness of the Charlier "young gentlemen;" and accordingly the veil of the "French and English Institution" remained *in statu quo* until last spring.

At this time we were again strongly urged, both by personal visits and letters, to see some of the Charlier perform-

ances, if possible. Some of these letters are from gentlemen who had been students of the great Institute before they were able to judge of its character, but who have subsequently availed themselves of the advantages of very different schools. So replete are their epistles with indignant scorn and sarcasm, that we refrain from publishing even extracts from them, having no feeling whatever in the matter further than to serve the cause of education. And for this there is no need of such in the present case; it will be seen presently that the great "Institution" sufficiently portrays itself in the estimation of all whose eyes are not blinded by a very vulgar sort of dust.

This second time we beg leave to call at the Institute. The worthy director assures us how glad he is to see us, but even while shaking our hand, and pressing our fingers rather uncomfortably, he is evidently ill at ease. It takes him a minute or two before he can sufficiently control his sudden dyspnœa to inform us that his assistant is sick, his classes have but just come in, etc.; but, if we would come next Friday, then we could see all. We are still so little disposed to believe the worst, that we go on Friday, according to appointment. But, if the learned director showed a little shortness of breath the previous day, on the present occasion he seems as if laboring under a very acute attack of the "dumb ague," accompanied with horripilation and other distressing symptoms. We tried to compose him by the playful assurance that we never before knew a Frenchman to be frightened at the idea of pen and ink, and that we were sorry to discover there was any thing terrible in our appearance. No use. The young gentlemen belong to so high a class that they would be all in confusion if any stranger heard them recite! For the life of us we could not help smiling; we bade the worthy director good morning, and retired.

But, in taking our leave, we were just as well satisfied as to the truth of the representations made to us as if we had seen every class in the Institute, and we think most of our readers will be as well satisfied as we on our merely presenting them

a few extracts from the Charlier catalogues. We have now before us two of these curious 24mo publications—that for 1869 and that for 1874. The language is exactly the same in both, the only difference consisting in additions or omissions. Speaking in italics of punctual attendance, the director says:

"*Weeks lost* then are of *vital* importance to the pupil."

In the estimation of most people it is what is *gained* that is of "vital importance." Again the "kind public" is informed that if "protracted illness" cause the absence of a pupil for eight weeks or more—

"The *loss* will be *divided* between the parents and the institution."

Whether it be the "protracted illness" or the "eight weeks and more" that are to be so "divided" we are not informed.

Of the superiority of the "French and English Institution" to all other seats of learning in America we have evidence in every form. We snatch a specimen or two almost at random:

"Many of the books used are *directly imported*. My frequent visits to Europe enable me to become *acquainted with all progress made*."—p. 12.

To import books *indirectly* would not do; for then they would not afford near so much instruction! But how could the fact be otherwise in view of the following piece of biography:

"I was born and brought up in the old French Huguenot Church, and the *Bible*, the whole Bible, and *nothing but the Bible*, is my *religion*."—p. 18.

Need we say that according to this doctrine there is no God but the Bible? But we pass on; here is another *morçeau*:

"Experience has proved that the *system* and *habits* of this school, together with the *excellent situation and sea-air*, are *in themselves* the most powerful auxiliaries for preserving and *improving* the health."

The "excellent situation and sea-air," be it observed, were in Thirty-fourth Street, east of Third Avenue!

Another form:

"I am convinced that this school is not behind those of France and Switzerland. Parents who have had their children lately in Germany affirm the same thing *for* that country."

Among the specimens of French politeness, as well as English grammar, are the following:

"The parents of my pupils MUST second me."

"A pupil having to complain of any teacher, must apply to the director; if *of this one, to his parents* with whom the matter will be fully discussed."—p. 26.

What is meant by "if of this one, to his parents," will, we think, puzzle many; but we find such puzzles at every page, and they have reminded us more than once of the remark of Cathos in *Les Precieuses Ridicules*, "Pour moi, I'aime terriblement les onigmes." But let us proceed; here is another scrap; a bull on quite a large scale:

"*This* department has become a *real nursery* for the *higher* classes. Indeed, I should be glad to have all my pupils commence *there*.

* * * * * * * *

The reader will bear in mind the very high tone of the patrons of the "French and English Institution;" yet among the articles which the high-toned, bashful students are required to furnish the head-master, is a "*dirty* linen bag." (!)

In a word, we indulge in no exaggeration when we say that in the two catalogues we have just examined there is not a half dozen correct sentences, or sentences which do not contain solecisms or vulgarisms of some kind. Yet their modest compiler does not confine himself to merely claiming that in no American institution is English taught more thoroughly than it is in his, but makes a general accusation against all others who teach in this country, as follows:

"The fact that the phraseology, *even* the *form* of this prospectus, *have* been *copied*, *imitated*, proves only *its* success and influence!"—*Ib.*

If "the fact" were true, it would at least prove that our educators indulge their thieving propensities in an exceedingly petty way. In our humble opinion it would not be more inglorious, or more dastardly to rob a hen-roost. It is for the impartial reader, then, to judge which of the three titles—Charlier Institute, French and English Institution for Young Gentlemen, or Charlatan Institute—is most appropriate. It is our sincere wish that, if there be any doubt as to the real character of the instruction given by M. Charlier, that gentleman will get the full benefit thereof, for the strongest personal sentiment

awakened in us while examining his performances is that of Molière's Nicole:

"De grace, monsieur, je vous prie de me laisser rire!"

Hitherto we have found time to visit only two of the female educational institutions of Massachusetts, although we have on file at least a dozen of invitations from others of its best class. The two, whose invitations we have been able to accept, are the Gannett Institute, Chester Square, Boston, and Maplewood Institute, Pittsfield. With the high character of the former, which was the first visited, our readers are familiar; so that, did we say nothing of the latter more than that it belongs to the same honorable rank, those aware of the great progress made in the Bay State in the science of teaching would sufficiently understand us. But, as it afforded us sincere pleasure to inform our readers what we saw and heard at the Gannett Institute, so it pleases us now to give such a passing glance at Maplewood as time and space will permit.

In the first place, none who have once seen Maplewood grounds and Maple Avenue can ever forget their peculiar charm for those that have the least appreciation of a high order of sylvan beauty improved by well-developed æsthetic taste. We had seen several photographs as well as drawings of the Institute and its surroundings, but we have found that not one of them does justice to the original, while those stately maples and gnarled elms, interspersed here and there with less pretentious habitants of the grove, retain their luxuriant foliage in its full verdure, as they generally do, at least from May to October.

In addition to its various other attractive features—not the least of which is its proverbial salubrity—Pittsfield may be called the City of Brooks, for here combine with musical prattle several branches of the Housatonic River. Besides this truly poetical "meeting of the waters," there are, in the immediate vicinity—within a short drive of the institute—not fewer than six miniature lakes, more than one of

which recall, in turn, some choice scenes on the banks of the Como and the Killarney.

But, better than all scenery, however romantic and picturesque—better than all other advantages—is the system of education, both intellectual and physical, at Maplewood; a system combining the improvements of over thirty years of successful operation, and embracing a high degree of culture in the fine arts as well as in music and other affiliated branches both useful and ornamental. But we have not merely observed the peculiar characteristics of the Rev. Mr. Speer's system; we have seen some of its excellent fruits.

The situation of St. Mary's Hall, Burlington, N. J., is very similar to that of Bordentown Female College, both occupying sites at once elevated and secluded on the Delaware, where the scenery on its banks is most diversified and beautiful. What Dr. Brakeley's institution is, our readers are already aware.* In approaching the Burlington school from the city, and observing the young ladies lying in groups through the nicely-shaded play-grounds to their recitations, we were reminded of the lines of Milton—

> "Another side umbrageous grots and caves
> Of cool recess, o'er which the mantling vine
> Lays forth her purple grape and gently creeps."

We have remarked to our readers more than once, that it is at those schools, whether female or male, where there is most culture, refinement, and respectability, least objection is made to the presence of strangers at the recitations. Nay, at such, there is no objection whatever, but the reverse. The principal of St. Mary's formed no exception to this rule, for there was no class or recitation which the Rev. Elvin K. Smith did not wish us to see and hear. This, being a Church school—although its students represent nearly all sects and most States—had a sufficiently plausible excuse for objecting to our seeing it at its work. But educators of this class make no excuses in such circumstances. That course they leave to those who have good reason

* *Vide* N. Q. R., No. LVII., Art. VI.

for concealment and mystery; and it matters little whether the students of the latter be male or female. Indeed, the rougher and coarser the students are, and the less they know about timidity or discretion, the more improbable it is that their head-master will allow their performances to be seen, and *vice versa*.* And we soon found that St. Mary's Hall forms no exception to this rule, but, on the contrary, serves as a strong confirmation of it. We have seen no more accomplished instructors of their sex than Mrs. Stanley, vice-principal, and Mrs. Handley and Miss Ackerman, art instructors. Dr. Schmdit evinces his versatile powers, without ostentation, in giving instruction in Latin and German, natural philosophy and chemistry. The vice-principal is a veteran educator, having been a teacher for at least a quarter of a century. We can truly say that the recitation of one of her classes in geometry, and the quickness with which she detected the slightest flaw —the smallest missing link—in an elaborate, intricate demonstration, formed one of the most interesting and pleasing exercises it had long been our privilege to witness.

We were sorry that the time-table of the railroad did not permit us to avail ourselves of the invitation of the principal to be present at the recitation of his own class in English literature and composition. But there were scarcely any of its members whom we had not seen in other classes, and the manner in which they acquitted themselves rendered it sufficiently evident to us that their literary studies had been carefully and

* Doubtless some of our readers regarded us as very ill-natured, if not guilty of gross exaggeration, when we sketched in our number for last March* a certain "Female Institute" on the Hudson, whose reverend head-master could not think of allowing his classes to be seen. But the last we hear of that great seat of learning, with its various high-sounding *aliases*, is, that it has had to be sold under the hammer of the auctioneer. As we were not present when it was "going" or "gone," we will not assert positively that so much lofty pretension and noisy claptrap had so inglorious an end; but we are assured, by those in whose statements we have implicit faith, that the catastrophe has occurred just as we have intimated.

* Article, *Institutes, Academies, and Seminaries on the Hudson.*

judiciously directed. But, if we could not have traced any of the good work done directly to the principal, our observation and experience had satisfied us long since how much the character of any educational institution depends on the abilities, judgment, and good sense of its head.

We have thus borne testimony all the more cheerfully to the unquestionable merits of St. Mary's Hall, because we have met so very few Jersey institutions possessed of any merits. It is certainly with no disposition to disparage New Jersey we make this remark; we make it simply because it is but too true; for, of several preparatory institutions we have visited in that State, not more than two or three have we found worthy of being ranked with the average of the New England States and New York, claiming to belong to the same rank. The rest, so far as we have seen, are, in general, really in a deplorable condition. The reader may remember our sketch of Morristown Female Institute. The picture, when seriously considered, was only too gloomy to be ludicrous.

Yet the Morristown Institute was by no means the saddest specimen we met. Some we found in such a hopeless condition that we did not think there was any use in trying to arouse them. We do not pretend to think it at all strange that it was precisely this class that made the loudest pretensions, and assumed the most high-sounding names. Doubtless, many think us very censoriously inclined; but, had we placed before our readers without the slightest coloring—not to mention exaggeration—what we saw at some of those places, we should have seemed to indulge in the wildest burlesque. Thus, for example, had we attempted to describe some scenes we witnessed at Pennington Institute—nay, had we confined ourselves to what we saw in one "mixed class" room in the basement of that institution, those who have most faith in our veracity would have found it difficult to accept the picture as one of sober reality. It is proper to say, however, that we do not allude to any thing generally understood by the term "immoral," although we consider untruthful representations, especially on the part of teachers, as decidedly immoral.

What we do allude to is wretched teaching, gross neglect, disorder—in short, a bedlam-like appearance of matters and things in general.

But New Jersey is by no means peculiar in this respect. Our experience of the preparatory schools of Pennsylvania is still worse; still more incredible. Some Pennsylvania colleges and universities are, unhappily, bad enough, as our readers know. True, we have found in the latter commonwealth two excellent colleges, but, thus far, not one university having the slightest claim to be so called, or to be called a college. As for the preparatory schools, those who make the effort intelligently will have almost as difficult a task as Diogenes had when he went about with his lamp in the highways in search of an honest man. There may be good preparatory schools in some sequestered spots in Pennsylvania whose fame has not yet extended thus far. Not but there are scores which assume high-sounding names, and proclaim themselves, in every possible way, as unrivalled anywhere in their excellence.

Inasmuch as we generally illustrate our views by example as well as by precept, perhaps it is proper that we should make some attempt of the kind here. The task is indeed not an agreeable one.* Having heard much from time to time, though nothing flattering, of the Moravian institution, at Nazareth, called "Nazareth Hall," we concluded to visit it last October. Reaching Easton we find we have to employ a private vehicle

* But it is some consolation to us to remember that there is not a single operation of the kind we perform which does not bring us scores of amusing epistles, from teachers as well as from parents and guardians. We transcribe here an extract or two from letters referring to the paper in our last number entitled "Our Educators—A Model Master." One of the best and most eminent educators in this country writes thus:

"I have read your further contribution to educational literature with thorough interest. Probably I am not quite as capable of enjoying a handsome surgical operation when the subject is a *Methodist*, as when he is only some pagan fellow or other; yet I plead guilty to feeling entertained whenever and wherever a pretentious humbug is exposed."

A Boston gentleman not engaged in teaching, but well known as a

to go to Nazareth. We are obliged to remain for the night at as wretched a tavern as it was ever our misfortune to stop at in any part of the world. Much as we had heard about the "Pennsylvania Dutch," we had not believed hitherto that there was any village in the State in which any other than the English was the prevailing dialect. But here we found a people a large proportion of whom might almost as well be addressed in Sanscrit as in Anglo-Saxon, while, of the remainder, even those who speak English indifferently only do so occasionally, the ordinary tongue being a sort of *patois* which is neither High Dutch nor Low Dutch, but more like broken-Danish than either. We experience no linguistic inconvenience, however, but on reaching the famous "Hall" we learn that "the cadets are out chestnuting." As we cannot wait another day we try to learn all we can without seeing any classes or students. The reverend principal conducts us to the chapel where curious scenes await us. On one side of the pulpit there are large piles of muskets, bayonets, etc.; on the other side several long tables ranged parallel to each other are ready to receive the next meal, while the "help" make a tremendous clatter in the next room, which, without asking any questions, we readily conclude to be the culinary department. We confess that, having been thus confronted in the chapel, we did not expect much order, or any remarkable cleanliness, in the class rooms; suffice it to say, therefore, that we were not disappointed in that respect. Turning to the catalogue of Nazareth Hall we find among other curious things under the head of "Discipline:"

"*Rule* 3. All *talking*, laughing, *and the like*, are strictly forbidden at the time of *dressing* and *undressing;* in the *sleeping apartment and washroom*, while *going to meals, and returning from them;* and while going to Divine Service, attending *upon*, and returning from it."—p. 11.

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scholar and thinker, closes a most agreeable epistle on the same subject with the following quotation from Milton:

—"I thought
Gyves and the mill had tamed thee. O, that fortune
Had brought me to the field, where thou art famed
To have wrought such wonders *with an ass's 'jaw!'*
I should have forced thee soon with other arms,
Or left thy carcass where the ass *lay thrown!*"

All this shows that "talking, laughing, *and the like*," are serious things. We were assured in the village that, whatever "talking" there may be returning from meals, there is rarely any disposition to "laughing." It would not do, it seems, to say "attending Divine Service," but "attending *upon*," etc. The latter is the Nazareth style of grammar. But who can blame poor Nazareth Hall for this, or worse, if they will only remember the sort of dialect used in a certain famous university?

Be this as it may, we were curious to learn whether the Moravians teach young ladies after the same fashion they do the "cadets." Accordingly, on reaching Bethlehem, the seat of the great Lehigh University, we venture to call at the "Moravian Seminary for Young Ladies." Here we learn that one of the rules, admitting of no exception, is that no stranger is permitted to hear recitations at that holy place. Such a thing would be an abomination; just the same as at the Sacred Heart, the Jesuit colleges, the Charlatan Institute, the University of Pennsylvania, Stanford Military Institute, *et hoc genus omne*.

We confess we did not think this piece of information at all inconsistent with the fact that in approaching the Seminary we were surprised to observe the students making signs to passers-by from the windows, and then laughing boisterously at their own cleverness. The Rev. Francis Wolle is "principal and superintendent;" but this gentleman is not to be seen by visitors who merely seek information. His time is far too precious for that, but we are assured that those wishing to pay bills, to make donations, or to send additional pupils, have no difficulty in seeing him and being honored with a very tight squeeze of his reverend hand. But as we could pretend to none of those things, it was not vouchsafed to us to glance at the holy man, even at a distance. There was, however, some balm in Gilead, although it would be a sin to let us see any recitation, the vice-principal at once proposed that he would show us every thing else. We are asked whether we care to see the young ladies in class, their recitation-rooms, bed-rooms, etc. This

rather puzzles us, but we agree to follow him. To our astonishment, he brings us to each class-room, opens the door and tells us to look in, as if it were a place where wild animals were on exhibition. The young ladies did not seem at all alarmed—they only tried to look dignified, and then tittered. Entirely satisfied with this part of the performance, we follow our cicerone to the bed-rooms, which we suppose to be the conclusion of the programme. We cannot say that we are a very good judge of this department; nevertheless, we tried to answer every question pertaining to it as well and as civilly as we could, while admitting our ignorance on certain delicate points in the matter of female night-dresses, etc. We may say here, as we once did in a similar case,* that we do not pretend there is any impropriety in showing the young ladies' bed-rooms, when their work as students is also shown; but to shroud the latter in mystery, and exhibit the former, is, at best, a suspicious performance. But the exhibition is not over yet. Our cicerone lays great stress on the number of pianos in the Seminary. There is something in his manner in doing so which, somehow or other, strikes us as ominous. The next moment he touches what seems to be the knob of a bell, and anon there is such a drumming of pianos that it requires a very determined effort of courtesy on our part to prevent us from obeying the impulse of closing our ears in the best way we can. We can assure our readers that of no other performance in our memory did it remind us so forcibly as it did of a certain German lyric entitled *Die Katzen und der Hausherr*,† from which we beg leave to extract a stanza or two, giving a translation of the same at the bottom of the page for the benefit of such as may not be able to appreciate the original:

"In dem Vorsaal eines Reichen
Stimmten sie ihr Liedchen an,

* Vide *New Catechism for Young Ladies—Gods and Goddesses.*—N. Q. R., No. L., *Art.* V., Sept., 1872.

† *The Cats and the Landlord.*

So ein Lied, das Stein 'erweichen,
Menschen rasend machen kann.

"Hinz, des Murners Schwiegervater
Schlug den Takt erbärmlich schön
Und zween abgelebte Kater
Quälten sich, ihm beizustehn.

"Endlich tanzen alle Katzen,
Poltern, lärmen, dass es kracht,
Zischen, heulen, sprudeln, kratzen,
Bis der Herr im Haus erwacht." *

At this crisis we make all the haste we can to the door; not, however, without requesting a copy of the catalogue of the "Moravian Seminary for Young Ladies." We are favored with two copies—one for 1870 and one for 1874. Our curiosity is so strongly aroused by the various scenes we had witnessed, that we can hardly wait to go to the hotel before we try what wonderful things does the catalogue promise; and in the first page we glance at we find the following comfortable assurance:

"The students and teachers of the Seminary constitute one household, at the head of which *stands* the Principal and his wife."

They do not stand, but they "stands." Charitably supposing that the grammar of the kitchen may be the fault of the printer, we turn to the other catalogue, but find it there exactly the same. Nay more, we find that, were we to copy all the similar specimens of grammar in either catalogue, we should leave few sentences behind. At first view it seems strange that frequently it is institutions of this calibre—let them belong to what denomination they may—which are best patronized. But a little reflection reveals two causes—one sectarian bigotry, the other a false notion of cheapness. Now, for example, this Moravian Seminary claims to be very cheap,

* In a rich man's hall assembled,
They their tuneful lay began;
E'en the very stones 'twould move them,
And to madness worry man!

Hinz, of Murner's spouse the father,
Beat with cunning skill the time:
Two old tom-cats, rakish, rather,
Puffed and blowed to keep in chime.

In the dance then wildly flitting,
Such a din and noise they make,
Hissing, howling, scratching, spitting,
'Till the landlord they awake.

but let any intelligent person examine its "regular rates," and then its long list of "extra instructions." At the bottom of this list stands the modest announcement—

"When *more lessons* are desired per term, than those specified, the charges are increased proportionately with the lessons."

This is duly signed, in capitals, REV. FRANCIS WOLLE. In short, in our humble opinion, the good people of Pennsylvania may henceforth regard "cheap lessons" and *Wolle lessons* as pretty nearly synonymous.

Of the genuine kind of Pennsylvania preparatory institutions we have seen no more than two, including male and female, namely, Rugby Academy at Philadelphia, and the Chegaray Institute of the same city. With our estimate of the former our readers are already familiar.* We have, indeed, alluded more than once to the high character of the latter, but it has so happened that hitherto we have been unable to give any particulars.

It is true that, had we made more effort, it would have been different, for Madame D'Hervilly has always been as willing as any other educator of her rank that we should see her school in operation. And, finally, when we did visit the Chegaray Institute, at Spruce Street, Philadelphia, by none were we more cordially or more courteously received. The principal reason why we did not hasten is, that the institution is one of the oldest and best known in America. There are few of the more intelligent class of our people who need to be reminded that the Institute was originally established in New York by the accomplished lady whose name it very properly still bears; for, in fact, there are few of that class in any part of the country who cannot recall some estimable lady friend, now having a family of her own, who was educated by Madame Chegaray. When the prestige of this lady as an educator attained its climax, she had a favorite niece, one educated with scrupulous and tender care, chiefly by herself, who rendered her efficient aid. This niece is Madame D'Hervilly, who has now been at the head of the Institute for

* *Vide* N. Q. R., No LVII., Art. *Another Excursion*, etc.

nearly, if not quite, a quarter of a century, and who has always fully maintained the enviable reputation so well earned for it by her distinguished kinswoman.

To these remarks it is sufficient to add here that the Chegaray Institute occupies a rank in Philadelphia similar to that occupied by Mlle. Rostan's School and the School of Mlles. Charbonniers in New York, namely, the very highest of which the metropolis of the United States can boast.* Although each of these three schools excels other city institutions, claiming equal rank in teaching its students to *speak* as well as read and write French, and maintains a similar superiority in the more elegant accomplishments generally, yet none of them yields to any other institution in the thoroughness of its English department. But what, in our estimation, does them more honor than even all this is, that money is not their object in teaching, for each carries out, both by precept and example, the idea of one of the greatest of French philosophers, that teaching is a religious duty to humanity.

"Enseigner est un devoir, non un droit; devoir religieux envers l'humanité, qu'il n'est pas permis de laisser retomber dans l'ignorance et la barbarie; devoir envers les individus, qu'il faut mettre à même de vivre le plus heureusement et le plus utilement possible; devoir envers la nation, à qui l'on doit des citoyens éclairés, honnêtes, courageux, etc."

Another institution, in whose class-rooms we have recently

* We humbly beg the pardon of the scores of other female institutions in our good city, each of which claims to surpass all the rest. Everybody who reads the newspapers is familiar, for example, with the wonderful virtues of the school which flourishes under the auspices of Miss Haines and Mademoiselle de Janon. Even the University of Pennsylvania, which claims to give profound instruction in "every branch of human knowledge," has scarcely a broader curriculum than the famous Gramercy Park School. And then its price is so moderate (?), *only* $900, for the school year, except that "the Spanish, Italian, and German languages, *and other accomplishments* (see circular), have to be paid for *extra*;" costing, perhaps, a couple of hundred more—a mere bagatelle, considering the unspeakable "value received!"

Then there is the renowned Kindergarten of the same institution, "in which Frobel's *ideas* will be *continued* and *extended* (!) (*Vide* Circular.) We are assured that a child, entering the Kindergarten at the age of five

spent some pleasant hours, is Locust Hill Seminary, Yonkers; a seminary whose play-grounds might easily remind those poetically inclined of the Fairy Queen's fabled shrubbery. The principal of this is a lady, Miss Emily A. Rice; yet so little afraid is she of criticism; so far is she from believing that we would do injustice to herself or her assistants, that she politely invites us, more than once, to hear her recitations. And this she does not do as a personal friend; she did so before she had ever seen us, or known any thing of us, further than to have read our criticisms on educational institutions. Miss Rice has no such affectation, and makes no such pretence as that her students would be frightened, or even seriously embarrassed, at the presence of a stranger. She has too much faith in her teaching to entertain any such apprehension; in a word, she is aware, from long experience, that knowledge is self-control and ease of deportment, as well as *power*, in its ordinary or objective sense.

And so it proved in this case. We were present at recitations in Latin, French, English literature, geometry, algebra, arithmetic; and we observed no more embarrassment or confusion than we did in any other seminary or school, male or female, where the system of teaching is equally enlightened, progressive, and thorough.

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or six years, will make sufficient progress, by means of "highly skillful object teaching," as to be able to distinguish a smoothing-iron from a saucepan in one week! Let the reader please observe that the price for all this is only $100 per annum; all *in advance*, for obvious reasons; paregoric extra. To us it is unaccountable that only the same small fee is charged in the "class for boys," except the secret of it be that boys require no paregoric. If any doubt that all this, and more, are done at Gramercy Park, let them read the *couleur de rose* "testimonials" thereto appertaining.

Still more marvellous, if possible, are the virtues of D'Aert's Institute, "beautifully located in the upper part of the city." As one of the evidences, which are at least "presumptive," that young ladies will receive the right training at D'Aert's, the Rev. Henry Ward Beecher is referred to by "special permission." (*Vide* Circular.) Here the price is *only* $800, exclusive of "higher accomplishments" and finishing touches, which are given at the operator's rates, and may not exceed perhaps $200, thus rendering the *tout ensemble* wonderfully cheap!

We beg leave to remark here, parenthetically, that it is but a vulgar error that female students, under proper training, are more likely to be embarrassed or confused at their recitations than male students possessing similar advantages. As well might it be said that ladies in the drawing-room are not as much at ease in their conversation and general deportment as their brothers or husbands. Those who are not thus at ease, and cannot help displaying their *gaucherie*, whether in drawing-room or parlor, only show that, however long they may have been at school, they are utterly devoid of culture. Their case is just the same as that of the awkward, blundering young men described by Chesterfield in his celebrated Letters to his son. If there be any difference, it is in favor of the former, it being well known that the female sex have from youth to age a natural vivacity and grace of deportment which fall to the lot of but very few of the rougher sex.

So much were we pleased with the recitations in general that we wished to know the names of the principal teachers in order that we might mention them as worthy of distinction. But they are not given in the modest circular of the Seminary, and we do not wish to incur the risk of seeming too curious about the names of ladies, especially when their physical charms are quite in keeping, as in the present instance, with their intellectual attainments and abilities. We can only remember the name of the Latin teacher, Miss Palmer, the recitation of whose class in Cicero would have put to the blush many a pretentious male professor. This highly-accomplished young lady is the daughter of Mr. Joseph H. Palmer, a veteran teacher, now retired, a graduate of our State Normal School, and at present school commissioner for the first district of Westchester County. We take this liberty with the fair Ciceronian's father, because it was our good fortune to meet Mr. Palmer at the Seminary, and to have the pleasure of his company, and of his assent to our views, at each recitation.

But none of the exercises pleased us better than the little

ones of the junior class reading their tiny compositions, and all the more advanced classes practising light gymnastics. Both of these departments are under the direction of a Massachusetts young lady, whose success in each is obvious and remarkable.

At Locust Hill Seminary, as well as at every other institution in which we have found the educational work, mental and physical, well performed, the principal is a thorough and zealous educator. What reminded us most forcibly of this during our visit was the recitation of Miss Rice's own class in geometry, which we cannot better describe by the passing remark we can now devote to it, than to say that the lady's easy familiarity with the principles of that beautiful science, and the lucidity and graphic force with which she explained whatever puzzled the students, really surprised us.

ART. VIII.— *Various Catalogues, Illustrated and Unillustrated; Chromos, Engravings, Frescoes, Statuary, Vases, etc.*

OUR object in the present article is simply to take a discursive glance at some of the various means by which the attractions of home are increased, and in which the useful is combined more or less happily with the ornamental. None, we hope, will infer from this that we are about to treat them to an essay on the perfections of our enterprising tailors, shoemakers, hatters, dry-goods dealers, mantua-makers, manufacturers of *blank* books, furniture manufacturers, manufacturers of hoop-skirts, fabricators of paste jewels, makers of "immense sacrifices," and others, who happen to have made sufficient money by their respective commodities to enable them to appreciate eulogies on the same at their full value. This sort of pantheism we beg leave to commit to such of our daily journals as have stomachs sufficiently strong to indulge in it. Let ours be the humbler, less ambitious, and more restricted task of jotting down our impressions of the influence of things

which we can neither eat nor drink, nor wear on our person, nor sit, nor lie upon—things, in a word, which concern neither the stomach nor the back, nor even the cranium, but exclusively the mind, especially the taste and the judgment. The *ouvrages de vertu* which we prefer to admire are those which may be regarded as belonging to some department, however modest, of the fine arts. Without further preface, then, we turn to our notes and proceed.

We spent several hours last May in the Chromo galleries and laboratories of L. Prang & Co., of Boston, and it is but seldom that we have devoted so much time more agreeably. No other similar establishment in this country produces so large a variety of pictures. It is not, however, for the number, but for the excellence, of its chromos it is distinguished; otherwise it would receive no place in this article as a source of "home æsthetics." The chief object of our visit was to judge, as best we could, whether those productions deserve to be styled, as they are, by way of eminence, "*American* chromos." Nor was it merely to gratify our own curiosity that we wished to be thus informed; although we can truly say that there is nothing that exercises any permanent or important influence on public taste in which we do not take a personal interest, as a private citizen, altogether independently of our duties as a public writer. But many of our readers had long evinced as strong a desire as ourselves to determine, as approximately as might be, whether it was to the credit or discredit of our country, in an artistic or scientific point of view, that the Prang chromos should everywhere bear the prefix "American."

Mr. Prang, or any one associated with him in his enterprise, we had never seen; nor have we to this day. We should not know one or the other if we met him this moment unannounced. But we are not the less willing on this account to bear testimony to the fact that, having seen and carefully examined all we took an interest in, we felt impressed that, if all who apply the epithet "American" to the results of their labors, in cultivating the beautiful, vindicated their claim to it

as well as Mr. Prang, there would be good reason to anticipate improvement and progress in the future; we might even say of them in no equivocal sense,

> "Studious they appear
> Of arts that *polish* life, inventors rare."

We think our readers would hardly thank us for a dissertation at this time on the various processes by which the finer class of chromos are produced. We imagine that even the derivation of the word *chromo*, from the Greek, through a large variety of labyrinths, will readily be dispensed with, especially when it is borne in mind that it would involve a more or less elaborate discussion of that troublesome, though highly interesting, branch of optics known as *chromatics*, and which treats of the mathematical relations of colors. Thus, for example, the ladies would scarcely care to be told, while getting ready for shopping at Christmas time, that the mean distance between two waves in a ray of light is .0000225 of an inch, or that the distance in red rays is .0000266, while the distance in violet-colored rays is only .0000167. Nor should we expect to please much better did we enter into particulars in regard to the curious metal, *chromium*, which is so called from its tendency to impart beautiful colors more or less indelible to its various compounds, each differing in shade according to the nature of the substance combined with the metal, or with its oxides or its acids.

In order to be able to appreciate a good chromo, however, it will be necessary to understand how its coloring is rendered at once so natural, so well-defined, and so permanent. When chromium is used alone, it produces different shades of green according as it is more or less pure. Combined with the peroxide of tin and chalk, in certain proportions, it forms that fine, fresh color known as English pink, and used chiefly on porcelain. Chromic acid is found in beautiful crystals of ruby-red; these fuse slowly on being exposed to the air; if heat be then applied, the fluid assumes a very beautiful color, almost black, but having a peculiar lustre. In short, there is

not a shade of color which may not be obtained in its most beautiful and permanent form, by skilful processes, from the numerous combinations of chromium. We need hardly add that the results are favorable only in proportion as those processes are performed by well-instructed, patient, practised hands.

In Boston the subject has been thoroughly studied in all its ramifications; and, accordingly, Prang's American chromos are not only far in advance of any produced in this country, but compare favorably with those of the most celebrated European houses, which devote their exclusive attention to that very interesting, highly-scientific branch of the fine arts. But we must mention a few of the chromos which pleased us most during our visit to the Prang gallery, only premising that we bear cheerful testimony to the fact that, so far as we have seen, all are fac-similes of oil or water-color paintings by artists of acknowledged eminence. Nor is it any exaggeration of their merits to add that, in many instances, if not in the majority, the copies are equal to the originals.

This is particularly true of the landscapes. Thus, for example, let any competent judge compare the chromos "Lake George" and "Near West Point," by Fuechsel, with the originals from which they are taken, and point out wherein are the former inferior to the latter. The same test, severe as it is, may be applied to "Early Autumn" and "Late Autumn," both by Bricher, without prejudice to the chromos. Among fourteen California views, after paintings from John R. Key, there are at least half a dozen as perfect chromos as we have seen in any private gallery in Paris, London, or Dresden, in each of which cities it has been our privilege to see some charming specimens. These California views are, in general, small, but their smallness is of that kind described by Burke in his "Essay on the Sublime and Beautiful." "What degree of extent," he says, "prevails in bodies that are held beautiful may be gathered from the usual manner of expression concerning it. * * * But to this day, in ordinary conversation, it is usual to add the endearing name of *little* to every

thing we love." We shall not be misunderstood, then, when we speak of those California views as very pretty little things.

Of a different type is "Dogs not Admitted," after Otto Bache. The original is one of the best of its class, and it is but simple justice to say that the chromo is eminently worthy of it. Among the figure pieces, "The Family scene in Pompeii," after Comans, is that which pleases us most. This, it will be remembered, represents a lady in a thoughtful, somewhat sad mood, sitting beside a table on which she leans her elbow, her cheek resting on her hand, while her eyes are turned with affectionate solicitude toward her child, who is also uneasy if not sad. The lady's face, her headdress, her arms, her drapery, the style at once luxurious and chaste of her apartment—all are felicitously rendered in this fine chromo.

There is no New York house to which the lovers of the fine arts are so much indebted as Goupil's, Fifth Avenue, now Knoedler's. For nearly a quarter of a century the gallery of this establishment has always contained the best specimens of European and American art; frequently the originals, but almost invariably the best copies in the form of fine engravings. And we do not remember to have ever seen it exhibit a finer variety than it does at present. Several of its oil-paintings claim more than a passing notice; some, indeed, are veritable gems. We should like to have an off-hand chat with our readers on the respective merits of these; it would afford us great pleasure to point out some of the chief peculiarities by which the amateur might distinguish native from foreign talent, without any other criterion than is found in the coloring, the lights and shades in landscapes, and the drapery in portraits. But this, to do it justice, would require an article by itself, whereas any thing more than a glance here and there, a passing observation, a suggestion, and an occasional word of approbation and encouragement, would be incompatible with the design of this brief desultory paper. For our object is not to present details but to indicate general results; in other words, to sketch in outline the various agencies by which the

artistic tastes of our people are, slowly but not unencouragingly, being developed.

We must not omit to remark, however, that Goupil & Co. excel in producing fine engravings. In order that this may be understood it is necessary to bear in mind that the New York house is a branch of those of Paris and London, so that an engraving bearing the imprint of Goupil, or Knöedler, is no more to be regarded as an article of "home manufacture" than the standard book written and even printed in Europe, but bound, or perhaps reprinted in this country. Nor is this the less true, in most cases, when the subjects are American—a fact which we find most happily illustrated in the fine engraving entitled "Lake Superior—Canoes in a Fog." The original painting is by Hopkins, but the engraving is by Mottram, one of the most eminent of contemporary English artists. The title is sufficiently suggestive of the design of the piece; it is, therefore, no slight praise to say that the design is successfully carried out. There is genuine poetry in those canoes, rendered more and more mysterious and weird in their appearance by the dense fog, as they lie motionless—as if only shadows themselves, on the placid, glassy surface of the noblest lake in the world.

A still finer engraving—one having attractions of quite another kind—bearing the same imprint, is "Woodland Vows." We can assure our readers that the moment we glanced at this, it reminded us of Petrarch and his Laura in the famous grove of the Valley of Vaucluse, especially of the exquisite sonnet commencing—

"Valle che d' lamenti miei se piena."

and which in our much less mellifluous dialect runs thus:

"Ye vales made vocal by my plaintive lay;
Ye streams embittered with the tears of love;
Ye tenants of the sweet melodious grove;
Ye tribes that in the grass-fringed streamlet play;
Ye tepid gales to which my sighs convey
A softer warmth; ye flowery plains, that move
Reflection sad; ye hills, where yet I rove,
Since Laura there first taught my steps to stray:—
You, you are still the same! How changed, alas,
Am I!"

Since such is the train of thought recalled to our minds by "Woodland Vows," we suppose we need hardly say how much we admire the picture. The lover with his fair mistress beside him, carving his monogram on the stately, stalwart tree in the recesses of the grove, suggests, even to the least imaginative, a scene abundantly poetical. Then the painter (Beyschlag) who has poetry in himself, does his part, and the engraver (Eichens), who seems scarcely less inspired, does the rest.

But few of our people have yet learned to appreciate Fresco Painting at its full value as a means of rendering home attractive, and imparting even to our ceilings a refining influence. One prominent reason of this is, that there are so many calling themselves fresco painters who are the merest daubers. Instead of contributing in the least degree to cultivate the æsthetic taste, the tendency of these is to vitiate it. Better that our walls should remain forever bare, without a figure or design of any kind, than that nine-tenths of such should give it the sort of plastering which they call "fresco." For our own part, were we obliged to pay that class of artists the payment would be for their plying their brushes on any other premises rather than ours.

This being the general character of the "frescoing" done in New York, it is not strange that those of our people, whose intelligence is limited, should regard fresco painting, properly so called, as one of the lost arts, if, indeed, they believe it ever attained to the dignity and importance of a true art. Yet the noblest specimens which modern civilization can boast, are frescoes. In order to prove this, it is only necessary to recall a fact or two. Those who have visited the chapel of Sixtus V., at Rome, and spent even half an hour in examining the frescoes of Michael Angelo, which adorn its walls and ceiling, will require no further testimony if they have any intelligent conception either of the beautiful or sublime in art. Then let them proceed to the Vatican if they can, and examine the *Stanze* of Raphael. But, once in Italy, the connoisseur need not go to Rome to satisfy himself on this point; it will be

quite sufficient to visit Florence. Nay, a day spent at the modest city of Parma will, or at least should, answer the purpose, for, there in the cupola of the church of St. Giovanni, is the celebrated fresco of Corregio, which represents the Ascension of the Virgin among a choir of angels, with a number of saints and other holy men and women below beholding the miraculous scene.

Those who cannot see the *chefs-d'œuvre* of the great masters may need further proof, but we have such in abundance. Thus, for example, Vasari, himself a great painter, as well as a biographer and art-critic, presents to his readers the true relative *status* of this branch of the fine arts. "Many of our painters *excel* in oil and water colors," he says, "and yet *fail* in fresco, because *of all kinds* of painting this requires the *greatest strength of genius* to execute; great resolution and great knowledge to give every stroke its just character and to employ them with expression and propriety." *

Is it any wonder, then, that fresco painters worthy of the name are so much "like angels' visits?" Nor can it seem strange, on reflection, that so few, especially in a new country, are capable of appreciating them when they are found. We know, ourselves, not more than one in New York of the first rank. Those who know any thing of the subject need hardly be informed that this one is Signor Raffaele Molini. If any person, competent to judge, enters a New York parlor or drawing-room, in which he finds frescoes that strike him as possessing genuine merit, he will run little risk of being mistaken in coming to the conclusion that either they have been designed by this artist, or have received their finishing touches from his pencil. We could easily illustrate the fact did we deem it proper to mention to our readers some of the private residences which, during the past twenty years, Signor Molini has thus elegantly and tastefully adorned. But gentlemen as well as ladies, whose taste and judgment are so cultivated that they are capable of appreciating a true work of art, do

* *Le Vite de' più excellenti pittori, scultori e architetti, da* SIGNOR VASARI.

not belong to the class who wish their private affairs made public, even when they are such as to do them honor. We respect this sentiment, and, therefore, will indicate only such specimens as are open to the public. This is true, for instance, of those which adorn the spacious dining-room of the Fifth Avenue Hotel. In order to satisfy such of our readers as may not be acquainted with the works of Molini that we are not peculiar in our high estimate of their merits, we extract the following passage from a description in one of the most æsthetic of our daily papers:

"Here the artistic skill of Signor Raffaele Molini has been exercised with its utmost beautiful results. It is difficult, by any description, to convey the impressions produced by the frescoes of this large ceiling, eighty by sixty feet, but we will try. The central figure is encircled by a wreath of laurel, in imitation of bronze, which joins in two small circles. The two grand circles enclose two lovely female figures and cupids, in "Raphaelesque style," the former representing "Day and "Night," which they very impressively personify. Around these circles there are ornaments in bright colors, going toward the centre of the side panels, in spirals artistically wrought, and connected with golden vases, which support a great profusion of flowers. These are on a white ground, enclosed with a Greek ornament. Near the cornices, and most appropriately set in the various outer sections of the ceiling, are female figures representing the seasons—all of these artistic in design and execution. The simplicity of all the designs is no less effective than the harmony of color and the perfection of the details.

None need think that we select the Fifth Avenue Hotel frescoes for the purpose of expressing any admiration for that house, as compared to others of its kind, for we entertain no such sentiment, and never did. We can speak of hotels as independently and as impartially as of any other establishments. We have never required the commodities of any of them without paying for them their full market price. To none of them, therefore, are we under the slightest obligation; but it is equally true that none of them have ever disobliged us in any manner. We are then free to say that, far from introducing the Fifth Avenue dining-room for the purpose of glorifying the hotel, we confess we have always regarded that establishment, even in its best days, as far too fussy—too much

like a stock market, or caravansary. The New York Hotel was far more comfortable and afforded its transient guests vastly better society under the auspices of Mr. Hildreth. Any of the Leland Brothers know how to keep a better house, and set a more generous table. In short, at no time did the Fifth Avenue possess the quiet, cultivated dignity, or home-like, unobtrusive air which the Windsor has at present, and seems destined to retain in the future.

It will then be understood that it is the work of the artist, and not the Fifth Avenue Hotel, or its commodities, we admire. Nor need those who judge the motives of others by their own think that we have any more selfish feeling in speaking of the artist than our sincere wish to improve the public taste, and at the same time do justice to genuine merit.

But we have seen frescoes from the pencil of Molini which are at once more classical, and more exquisitely chaste and delicate in their outlines, than those at the Fifth Avenue. Thus, for instance, we wish we could only mention to our readers the parlors and drawing-rooms where we have been charmed with some of his scenes from Dante's *Inferno*. The student of Italian will remember the passage in Canto XIII., in which the Harpies and their habits are described by the great Florentine.

> "Quivi le brutte Arpie lor nido fanno
> Che cacciar della Shofade i Troiani
> Con tristo annunzio di futuro danno."—v. 10.

The whole is finely rendered by Signor Molini. Another singularly happy sketch from the same prolific source is that representing Hecuba after she had seen her daughter Polyxena slain, and then, glancing in another direction, discovered the mangled body of her son, Polydorus, forlorn on the sea-strand:

> "Ecuba trista, misera e cattiva,
> Poscia che vide Polisena morta
> E del suo Polidoro, in su la riva
> Del mar.*

We could mention many other scenes in the *Inferno*, and

* Canto XXX, v. 16.

in other great poems upon which Molini has exhibited the magic power and grace of his pencil, but lack of space and time precludes us.

The casting of iron and zinc statues, vases, and other ornaments, has made a much nearer approach to perfection in this country, during the last decade, than is generally supposed even by connoisseurs who have not closely observed its progress. Those unfamiliar with the history of art are apt to regard this as of little importance. Many who make high pretensions to intelligence sneer at the idea of statues and vases coming from the foundry; but we beg leave to advise them to be somewhat careful in this respect, and bear in mind that the Egyptians, the Assyrians, the Phœnicians, the Greeks, and the Etruscans, took a just pride in their cast statuary in their best days. Were this the place and time to enter into particulars, we could easily illustrate the fact by reference to the noble specimens brought from the ruins of Thebes, Nineveh, Tyre, and Athens, some of which are to be seen in any of the great museums of Europe. The British Museum is particularly rich in Etruscan and Greek cast statuary. Every student of art is aware that the chief work of the Greek artists in the second century of our era was to reproduce in different metals, for their new masters, the famous statues of their predecessors. And the same remarks, but slightly modified, are true of "terra cotta" statuary, of which there is a large and beautiful variety in the British Museum, including specimens having an antiquity at least as remote as that of the Pyramids.

So much, then, for the knowledge of those of our people who mock at cast statuary as a modern vulgarism. Yet we must admit that there are extenuating circumstances in their case, for there are far too many of our "ornamental iron works" whose "statues" are but sad caricatures. There are some of these which we can never look at without being reminded of the well-known epitaph on Wren, the architect:

> "Lie heavy on him, earth, for he
> Laid many a *heavy load* on thee."

But it is not to this class we direct our attention on the present occasion; they would be out of place in a discussion of the Æsthetics of Home except for the purpose of contrast. The class of ornamental works which form our subject require to have men of culture at their head—men who have a higher object than mere money-making; above all, men who have some knowledge of the principles of art. And what is true of iron, zinc, and bronze statuary, is equally true of terra cotta. But we have at least one instance in New York, and another in Philadelphia, in which all these conditions are fulfilled. There may be other instances, but we wot not of them, and what we do not know we will not say.

New York has the lead in iron and zinc statuary, while Philadelphia has the lead in terra cotta. The head of the former is Mr. J. W. Fiske, the head of the latter Mr. S. A. Harrison. Each is a representative in his particular branch, the same as Mr. Prang is a representative in chromos, M. Goupil, or M. Knoedler, in engravings, and Signor Molini in frescoes. But, since the approaches to perfection made by the two New York and Philadelphia houses in their respective branches are pretty nearly equal, and since one produces nearly if not quite as large a variety of statues and vases as the other, we may confine our glances to the specimens of one, especially as the brief space we have now left will not admit of details.

Having spoken in general terms of both branches of ornamental works, after a careful examination of each, it now only remains for us to mention some specimens of one. We have certainly been at many a place, in Europe as well as in America, called a "gallery of the fine arts," which does not deserve the name better than Mr. Fiske's show-rooms. These present a larger variety of figures, representing ancient and modern subjects, than we have seen anywhere else in this country. There are very few of the statues and vases of antiquity, rendered immortal by the genius of their authors, that have survived the ravages of time, of which there are not really good copies to be found here.

Among the great sculptors of whose principal works copies

are given in iron or zinc are Polycletus, Verrochio, Della Porta, Niccolo of Pisa, Luca della Robbia, and Canova. Of the figures which pleased us particularly, we may mention "Hebe Sitting," after Wolgast; Psyche (Canova) "Bathing" (a lady coming from her bath, after Drake); "The Huntress" (Diebolt), Diana with Hound (Antique); "Eve at the Fountain" (Bailey); "Hercules and Lion" (Wolf).

The vases include well-executed copies of almost all the famous Egyptian, Greek, Etruscan, and Roman vases in the great art collections of Europe. Nor are the lower animals unrepresented in the Fiske gallery; scarcely any known to fame are forgotten. As for dogs, deer, eagles, etc., we have them in several varieties. Passing to the basement-floor, where the artists give their finishing touches with chisel or pencil, the first figure we meet reminds us of old Cerberus, as described by Hisiod:

> "A grisly dog,
> Inplacable, holds watch before the gates;
> Of guile malicious. Them who enter there,
> With tail and bended ears he fawning soothes:
> But suffers not that they with backward step
> Repass."

Indeed many a figure we have met at Fiske's and Harrison's which to us was a veritable poem in the train of thought which it evoked, and the reminiscences which it conjured up. Nay, at each place, many a long-forgotten lesson was vividly recalled to our memory. In a word, we consider the pleasure we have derived from the paintings, chromos, engravings, frescoes, and iron and terra-cotta statuary we have examined, as a sufficient requital for the pains we have bestowed on them; if only a score of our readers be as much pleased with the same as ourselves, our reward will be ample.

NOTICES AND CRITICISMS.

HISTORY.

1. *History of the Reign of Ferdinand and Isabella the Catholic.* By WILLLIAM H. PRESCOTT. New and Revised Edition, with the Author's Latest Corrections and Additions. Edited by JOHN FOSTER KIRK. 3 vols., 12mo. Philadelphia: J. B. Lippincott & Co. 1874.
2. *History of the Conquest of Mexico, with a Preliminary View of the Ancient Mexican Civilization, and the Life of the Conqueror Hernando Cortes.* By WILLIAM H. PRESCOTT. 3 vols., 12mo.

ALTHOUGH these works have now been a long time familiar to the reading public, yet such a charm have they continued to possess that a new edition of them will be only too welcome. Of all American historians, Prescott is at once the most popular among the intelligent classes, and the best deserving of popularity among all classes. To the impartial mind and thorough habit of research, which are required for the functions of an historian, Mr. Prescott adds the indescribable fascination of narrative, the grace of style, and the power of infusing life into his portraitures, that have rarely been equalled; among American authors, never.

Most of us can remember when the history, given to the student, was little more than a collection of dry details, to which the inquirer resorted for information, but with little idea of deriving other gratification than that which arises from increasing one's store of knowledge. At the present day, when it has become a requisite for every work to possess interest, historians have too often fallen into the opposite extreme, and, in their desire to gratify the public with an entertaining work, have overlooked the more essential features of accuracy and justice. Both these errors Mr. Prescott has judiciously avoided. While the interest of the story is never allowed to flag, the reader is never tantalized with a suspicion that the imagination of the writer has been allowed to trifle with his judgment, or that any fact has been stated that does not rest on good authority. Another distinguishing feature of Prescott's histories is their impartiality. While Ferdinand and Isabella, Columbus and Cardinal Ximenes, Cortes and Montezuma, are all brought before us in the most life-like colors, there is no dwarfing of surrounding characters to exhibit the favorite in bolder relief; no denial of justice to those whose actions are most censured, and no suppression or evasion of the gravest errors committed by those who generally receive the highest praise. Even Isabella, who is justly the object of the historian's highest admiration, receives due censure for the great blemishes on her administration—the establishment of the Inquisition, the enslaving of Moorish prisoners, and the expulsion of the Jews.

The History of Ferdinand and Isabella will always possess a peculiar interest for American readers, from its intimate connection with the discovery of the American continent. But it contains, independently of this, much matter that claims the attention of the student of political history. The union of the crowns of Aragon and Castile, by the marriage of Ferdinand and Isabella, laid the foundation of the greatness of the Spanish government. It is true that the substantial reforms which they were thus enabled to introduce were clouded by the establishment of the Inquisition, which is the darkest blot on the reign of these sovereigns. But it should be remembered that the thought of associating criminality with the idea of religious persecution was unknown in the middle ages. Strangely enough, even the persecuted heretics generally recognized the justice of the principle of persecution, and were quite ready, if the opportunity offered, to become the persecutors themselves! To them the crime of their antagonists lay not in the act of persecuting, but—as they considered it—persecuting the true faith. It is further probable that, but for this very spirit of bigotry which kindled the fires of the Inquisition, the enthusiasm could never have been awakened which prompted the war with the Moors and the recovery of the provinces which for seven centuries had been under the dominion of the Moslem.

The story of the "Conquest of Granada" is one of the most poetical episodes in Mr. Prescott's histories. He seems to be perusing in it not so much an ordinary history as a marvellous epic poem, and a poem of which, unlike the epics of Greece and Rome, the grand central figure is a woman. It is certain that, but for the personal efforts of the heroic Isabella, the enterprise would never have been brought to its triumphant issue. It was she who, when the roads were dilapidated, procured six thousand pioneers to reconstruct them—bridged the rivers, opened passes through the mountains, bought up grain which she caused to be ground in her own mills—so that

"When the roads, which extended more than seven leagues in length, were completed, fourteen thousand mules might be seen daily traversing the Sierra, laden with supplies, which from that time forward were poured abundantly, and with the most perfect regularity, into the camp."—Vol. ii., p. 62.

The immense expense which all these measures involved were met by the efforts of the queen, who obtained loans from wealthy individuals and religious corporations, by mortgaging the royal demesne; and, when the supplies thus raised proved inadequate, pledged the crown jewels and her own personal ornaments to the merchants of Barcelona and Valencia.

"Such were the efforts made by the high-spirited woman for the furtherance of her patriotic enterprise. The extraordinary results which she was enabled to effect are less to be ascribed to the authority of her station than to that perfect confidence in her wisdom and virtue with which she had inspired the whole na-

tion, and which secured their earnest co-operation in all her undertakings. The empire which she thus exercised, indeed, was far more extended than any station however exalted, or any authority however despotic, can confer; for it was over the hearts of her people."—Vol. ii., p. 63.

The same resolute and unflinching spirit which Isabella displayed in prosecuting the war against the Moors characterised the assistance which she rendered to Columbus in what was at the time considered his desperate enterprise in search of a western world. Here, again, the expense of the whole undertaking was borne by the crown of Castile—the funds advanced by Aragon being simply borrowed for the purpose. It is, therefore, to Isabella, as well as to Columbus, that the world is indebted for the discovery of the Western Hemisphere.

The character of Ferdinand does not compare favorably with that of Isabella in the brilliant pages of Prescott. Notwithstanding his consummate abilities, his was the spirit of egotism, self-centred and darkened by traits of perfidy and ingratitude to those from whom he had received the greatest services—such as Columbus, the great Captain Navarro, and Ximenes. From the death of Isabella, his popularity appears to have steadily declined; though, after his decease, his subjects soon learned to look back with regret on an administration of which they recalled only the glorious commencement. As our historian justly observes:

"Ferdinand, in fine, a shrewd and politic prince, 'surpassing,' as a French writer, not his friend, has remarked, 'all the statesmen of his time in the science of the cabinet, may be taken as the representative of the peculiar genius of the age; while Isabella, discarding all the petty artifices of State policy, and pursuing the noblest ends by the noblest means, stands far above her age.'"—Vol. iii., p. 417.

The conquest of Mexico opens a new field of interest in its account of the wonderful civilization of that region—a civilization whose origin is shrouded in darkness, except that tradition shows it to have arisen out of the ruins of a yet earlier civilization, possessed by a race which had become utterly extinct long before the arrival of Cortes, but whose traces still exist in the strange ruins found in the forests of Central America. Whatever may have been its original source, it is certain that the Spaniards found in Mexico something more nearly approaching the civilization of Europe than had hitherto been discovered on the western continent; and that in many of their customs were found singular analogies to Christian rites, for which it is difficult to find an explanation on any of the received theories. Such was the ceremony of naming their children in which

"The lips and bosom of the infant were sprinkled with water, and the Lord was implored to permit the holy drops to wash away the sin that was given to it before the foundation of the world, so that the child might be born anew."—Vol. i., p. 67.

Equally remarkable were the traditions of the fall of man, the deluge, the ark, and the bearded white man who came from the East and

as mysteriously disappeared; while a coincidence, found in no other heathen religion, is in the ceremony in which

"An image of the tutelar Deity of the Aztecs was made of the flour of maize, mixed with blood, and, after consecration by the priests, was distributed among the people, who, as they ate it, showed signs of humiliation and sorrow, declaring it was the flesh of the Deity."—Vol. iii., p. 369.

It is probable that the Mexicans themselves had adopted these peculiar ceremonies and traditions, together with most of their civilization from the Toltec race which they exterminated, and which the sculptures in the ruined cities of Guatemala show to have been a race of the Aryan type. This is rendered probable by the fact of the evident traces of early barbarism which they still retained, especially the practice of cannibalism. In the accounts of the wars with the Spaniards it is noticeable how the instincts of savage ferocity broke through all the veil of apparent civilization, proving them to be not without affinity to the fierce tribes of the northwest. This would confirm the theory advanced by Prescott himself, that the Mexicans were originally a savage or barbarous nation, like the North American Indians, who, having subdued a race of superior civilization, acquired by degrees a degree of their culture and refinement. But whence came the civilization of that earlier race? This continues to be one of the insoluble problems of history.

The new dress in which this edition of Prescott appears, including its clear, handsome typography, is not one of its least agreeable features.

The History of Greece. By Professor Dr. ERNST CURTIUS. Translated by ADOLPHUS WILLIAM WARD, M. A. Vol. V., 16mo, pp. 542. New York: Scribner, Armstrong & Co. 1874.

THE previous volumes of this work, having been already reviewed in our pages, it only remains to state that the present issue carries on the history to the treaty concluded between Athens and Philip of Macedon, which terminates the connected history of free Greece. The first chapter is devoted to Macedonia and the other kingdoms of the North; and we find here a congeries of nations, regarded by the Greeks as barbarians, differing from them essentially in language, manners, and customs, yet of a common stock with the Grecians; and in their political and social life, many of their usages, and even in their proper names, exhibiting a close analogy to the people of the heroic age as described by Homer and the Tragedians. Here we find in actual existence the very customs of which historical Greece shows no trace, but which her epics indicate as those of pre-historic times. Of these countries Philip, king of Macedon, had rendered himself master, and was now biding his time to extend his dominion in Greece. Well acquainted with Greek

statecraft, he availed himself, in the first instance, of the troubles in Thessaly, to establish his authority over that region; and thence, while threatening Olynthus, having conquered Amphipolis, awaited his opportunity to absorb, or at least reduce, Athens.

The second chapter exhibits the policy and intellectual life of Athens during the period preceding the appearance of Demosthenes on the public horizon. It is clear, from the progress of events, that the early vigor of Athens had been exhausted by her subjection to Sparta. Her policy was now fitful—controlled by outside influences, and each vigorous advance followed by a corresponding reaction. Party spirit had taken possession of the Athenians, and her policy shifted with the success of the Spartan or Bœotian party in her councils. In her social condition a similar decadence was visible. Self-indulgence and ostentatious expenditure were the order of the day, and public spirit had become a thing of the past. Litigiousness had become a prevailing vice. The orators and the generals were perpetually at feud, until the latter became gradually estranged from the city, and thought only of personal power. Art, though still flourishing, was no longer as it had been in the time of Pericles. Philosophy and oratory alone maintained their high standard, and in the latter department a giant now arises, who, by his efforts, brings to pass a regeneration of the Attic commonwealth.

The third chapter brings Demosthenes before the people, and shows the manner in which he influenced the history of Athens. He began, remarkably enough, by withstanding a feverish war spirit which had arisen with regard to Persia. Demosthenes, however, knew that Persia was not the real foe that Athens had to fear, and saw the importance of her strengthening her hands for the hour of danger. Accordingly, he stimulated her energies in the direction of the necessary reforms; and, when these had been effected, he roused the people to proceed vigorously with the Macedonian war, which had dragged on a half-dead existence for the past six years. These orations were the celebrated Philippics. To the influence of Demosthenes may be attributed the resistance which Athens was enabled to oppose to the pretensions of Philip; and to the fickle and short-sighted policy, which led the Athenians eventually to disregard his recommendations, is due the delusive peace into which they were cajoled, and which paved the way for the ultimate triumph of the Macedonians.

The fourth and last chapter contains the final struggles for the independence of Greece. Philip had now obtained a position in the centre of the Greek world. He had established protectorates in many of the Greek States. The Athenians, however, appear to have been completely blind to his schemes, until Demosthenes once more aroused them to a sense of their danger. He succeeded in silencing a powerful Macedonian party which had grown up among the Athenians, and bringing

them to open war, which drove the Macedonian back from Byzantium, which he was then besieging. But the intrigues of the Macedonian party in Athens soon brought them back to a state of lukewarmness and half-heartedness in the conflict in which they were engaged, and the result was the utter failure of the Greeks in the battle of Chaeronaea. Athens was not even then incapable of making further stand for her liberties; but the spirit of freedom was dead, and, with the peace into which she allowed herself to be decoyed by Demades, the liberty of Greece was at an end.

The history, as a whole, is entitled to high rank, and may be regarded as a standard authority. In addition to the copious tables of contents given in the preceding volumes, that now before us contains a full general index.

A History of Germany, from the Earliest Times: founded on Dr. David Müller's "History of the German People." By CHARLTON T. LEWIS. 12mo, pp. 799. New York: Harper & Brothers. 1874.

GERMANY possesses, at present, a special interest for the student of history, from the fact that it has so recently emerged from the condition of a simple confederacy of more or less powerful kingdoms, principalities, and duchies, into that of a united empire, and one which is, at least for the present, the great power of Europe. A history, therefore, which shall follow the growth of the German race from its origin, showing how the qualities which have raised these people to their present eminence were those which characterised them from their earliest emigration—and how, notwithstanding their early tribal constitution, the instinct of imperialism was ever dominant in their nature, and which shall trace this instinct through its various phases in the earlier empires to its full development at the present day—had become a desideratum in our literature. Such a history, though of course little more than an outline, we have now before us.

From the first appearance of the German races on the stage of history, no feature is more conspicuous than their disposition to attach themselves to the personal service of a chosen master—a master chosen by themselves, but to whom their allegiance was unreservedly given.

"This allegiance was voluntary when assumed, but proved an obligation which was observed afterward like a conscience; it was formally and solemnly assumed, sometimes by a mutual pledge of friendship, sometimes by a covenant of service, and afterward, in feudal times, by an act of homage: it was strictly personal, and was due, not to any community or government or family, but to individual men; and the self-denial and sacrifice involved in the faithful observance of this obligation were the pride and honor of manhood. In all these respects personal allegiance was emphatically a German idea."—p. 21.

This element in their nature furnishes the key to the history of the

Germans, and was the secret of their stability and invincibility. It was not surprising that a people so constituted should have promptly accepted Charlemagne as their emperor, although representing the kingdom of the Franks which had adopted a different faith from their own. By so recognizing him they laid the foundation of the greatness of the present German Empire.

"The entire German race owes to him its first political organization. It was the purpose of his life, which never wavered, to unite all the German tribes under the control of one imperial government and of one Christian church. * * * * The national consciousness of the collective German tribes dates from his reign.—p. 95.

The chapters devoted to the history of German civilization show that, under the Hohenstaufen emperors in the thirteenth century, Germany possessed a degree of education and refinement altogether exceeding what was found in the rest of Europe. These were the days of the knights and minnesingers; this was also the period of the rise of free cities which fast grew up around the cathedrals for mere purposes of trade, but eventually became one of the most important elements of political strength and freedom. This was also the period when colonies were founded which became eventually the greatest German powers, Austria which was for centuries the seat of the German empire, and Prussia, which now controls Germany and in fact Europe.

With the rise of the house of Hapsburg, the imperial feeling in Northern Germany appears to have declined. This would seem principally due to the fact that, while court life had degenerated and knighthood sunk into barbarism, the free cities were rife with intellectual activity. Of this state of things the Hanseatic League was the legitimate result, and the decline of the empire followed as a matter of course.

From the period of the Reformation to the peace of Westphalia, the history of Germany is virtually the history of Europe. But it was a period of which the good and evil effects were nowhere felt so fully as in Germany itself. The nation rose superior to the demoralization caused by the Thirty Years' War from the intellectual and spiritual impulse imparted by the Reformation.

"The imperial unity of the nation was gone, and German history itself might have ended here, but that two great elements of new life were in it; the spirit of the Reformation, and the inborn, constructive vigor always shown in connection with the old Saxon blood."—p. 454.

From the time of the Thirty Years' War to the peace of Utrecht, Germany appears to have stood at a disadvantage with other European powers. But the German life, checked in its former developments, was suddenly to bloom out in a new quarter. Prussia appears on the horizon, and with Prussia the latter part of the work entirely deals. Under Frederick the Great this kingdom rose to be a first-class power with rapidity, only equalled by its recent advances, and, though temporarily

overshadowed and humbled by Napoleon, has triumphantly avenged its former disgrace, and in so doing may be said to have created the present German Empire.

How long it will endure in its grandeur is quite another question, for only the credulous and short-sighted regard the military power and glory of France as having passed away in two or three disastrous campaigns. Be this as it may, Mr. Lewis's book is a good epitome of German history—one which may be profitably added both to the school and family libraries, with only the caution that it rather exaggerates the importance of recent successes considered ethnologically.

The French Revolution and First Empire. By WILLIAM O'CONNOR MORRIS. Longmans, Green & Co. pp. 330. London, 1874.

WHILE Billaud Varennes was in exile at Cayenne he was visited by a young general in the service of the Republic with offers of conditional pardon from the government which then ruled France. In the course of conversation, the young officer alluded with regret to certain proceedings of the Convention as calculated to leave a lasting stain on the memory of the Revolution. "Young man," said Billaud, "when the bones of the second generation after yours shall be bleached white with age, the history of that great struggle will be written. The French nation manufacture history so rapidly that the dust of time already seems to lie thick on the records of the Revolution, but the fruit of that great event still ripens, and perhaps the veteran terrorist was not far wrong in his limit of time. The author of this little book seems to think so, for, while he says that the Revolution seems to have brought evil to France and good to mankind at large, he disqualifies his statement with a frank acknowledgment that he is not prepared to decide whether it was on the whole most prolific of good or evil.

Mr. Morris's book is the latest attempt to present in a compact form a manual of the French Revolution from 1789 to 1815. From the preface it appears to have been written to form one of a series of books called "Epochs of History" (now in course of re-publication here), but, the editor deeming it "suited to readers more advanced," it was honored with a separate publication. Why it was so promoted, it is hard to tell. To any one tolerably well read on the subject, it offers nothing new either in matter or manner, and it is certainly best adapted for those who are just commencing the study of this Epoch of History. For them, however, it is in many respects an excellent hand-book. Condensation in writing a history of a period so fruitful of events as the one Mr. Morris has chosen requires a high degree of talent, and, as far as condensation is concerned, he has been eminently successful. Almost all the leading events are recounted and those only; no undue

proportion of space is given to the purely military events to the exclusion of an account of the internal changes which took place in France. The author indicates in his notes the best and latest authorities, thereby pointing out the way in which the student may follow up the subject. Intended for young readers the book should be attractive in style ; it certainly is so throughout, and at times—as in the relation of Napoleon's career from Dresden in 1811 to the abdication—brilliant.

There are, however, some faults about the book, whichs hould be carefully noted. First among them is a habit of making loose statements of fact, whereas, in such a book as this, the greatest exactness should be observed. The author alludes (page 39) to the old story of "The Lord bathing His feet in the blood of His vassals," which we supposed had by this time been relegated from the page of history to the lecturer's platform. He says (page 21) that "English statesmen, trained in political life," had foreseen the approach of the Revolution. Surely Mr. Morris never heard of any "English statesman" who so prophesied except Lord Chesterfield. He speaks (page 17) of Voltaire as "sapping away the throne, the altar, and the privileges of the great." Voltaire's attacks were confined to the altar. It is a popular error which confounds him with his successors.

There is another objection to which the book is open. The author has a great admiration for the first Napoleon, which, from the time of his appearance on the scene, not only colors his comments, but even tinges his statements of fact. For instance, he characterizes the sacrifice of Venice at the treaty of Campo Formio as "not so base" as historians have represented it ; he makes no mention of the robbery of the Swiss treasury to fit out the Egyptian expedition ; he even undertakes to justify the murder of the Duc d'Enghien, and represents Napoleon as consenting to his death, from aberration of mind caused by a dread of assassination (pp. 187–245).

Mr. Morris's opinion of Napoleon will be best seen from the following extracts (p. 205):

"The Catos, who denounce Brumaire as a crime and an assassination of French liberty, simply misunderstand or distort facts. * * * Bonaparte had really France on his side; * * * the dictatorship he seized was perhaps needed, was certainly the choice of the French people, and * * * cost not a drop of blood. As for the 'liberty' which he has been charged with destroying, it was a mere figment without real existence; and he could not have struck the Republic down if it had a root in the national heart."

Now, in forming a judgment on this event, the canons to be employed are simple. The only title to the position he seized, which it has ever been claimed that he had, was the right of the strongest—he was the man for the place. As to the voice of the people, to which our author alludes, it would have been given in favor of any successful soldier, who had placed himself in Bonaparte's position *before appealing to*

their suffrages. His title to the supreme power, then resting solely on his fitness to wield it, his seizure of it could only be justified by the manner in which he did wield it. By repelling the foreign enemies of France, and consolidating her frontiers; by curbing with a strong hand the excesses which revolutionary passions had rendered frequent, and yet leaving untouched that liberty for which France had sacrificed so much; by restraining the license of the press, but leaving its freedom unviolated; by nursing the resources of his country in the many ways open to a man of his remarkable abilities, he would best have established his title to the crown which he assumed, and justified the violent measures by which he put an end to the first republic. How much of this he did, how much he left undone, a study of his career will disclose, but we consider that author an unsafe guide for those who propose to commence this study, who seek to invest Napoleon with that halo which an inordinate worship of his genius has cast around his character.

The materials for forming a proper estimate of that character have greatly increased of late years. The publication of the bulky volumes of his correspondence should entitle Louis Napoleon to the gratitude of every historical student; to be sure, they have hardly had the effect he expected, and, by the time that his uncle's letters had been made public as far down as 1807, he perceived they were not calculated to increase the worship of Napoleonic ideas, and from that time on they are sadly garbled, but the insight into the character of the writer, which the first sixteen volumes give us, is invaluable. With what terrible effect these volumes can be appealed to in support of the theory of his character set forth by the bitter enemies of himself and of his dynasty, has been shown in the recent work of Mr. Laufrey. When a friend of Cæsarism shall, with their aid, prepare a picture of his hero, it is possible that we may not find the colors so dark, nor the form so repulsive, as Mr. Laufrey's painting, but the character of the First Emperor which history will finally adopt, whatever it may be, will be far removed from the one presented by the empty sophistries of J. S. C. Abott, and the rhetorical fireworks of Joel T. Headley.

Another fault of Mr. Morris's book consists in giving a duplex view of his characters and events. This is a common error with those who, possessing strong opinions of their own on any particular subject, endeavor to prove themselves impartial by a perfunctionary quotation of opinions opposed to their own. An amusing proof of this may be seen in the publisher's announcement of the French translation of this very book. It is recommended to readers as calculated to suit all tastes, as pleasing alike to the admirers of the modern Cæsar and to the republicans of the school of Mr. Laufrey. This mode of writing greatly weakens the force of the work. One who is familiar enough with the history of the times to be able to pick

out what may be called the crucial events is never deceived by this appearance of impartiality. Those, however, who are unfamiliar with the subject, and for such this book is professedly prepared, will be at a loss to gather from it, on many points, any definite views whatever. Of the fault alluded to, take this single example:

"[The career of Napoleon] upon the whole, contributed to national welfare (p. 230); "to this day it has been in part justified by noble institutions and great measures" (p. 313); "[its] inevitable tendency, even at the time of its highest glory, was to lessen manliness and self-reliance, to fetter and demoralize the human mind, and to weaken whatever public virtue and mental independence France possessed."

All these extracts are the author's statements of his own opinions. While quoting, we cannot refrain from giving the following extraordinary paragraph with which Mr. Morris concludes a few remarks on the "allied and subject states:"

"And even nations, who felt the terrors of his sword and rose justly against his domination, still acknowledge that his rule was not without good, and have a kind of sympathy with the modern Cæsar."—p. 263.

We wish Mr. Morris had designated these sympathetic nationalties more particularly. Do they lie south of the Pyrenees or east of the Rhine? The paragraph reminds us of a brilliant display of rhetoric with which Mr. Headley concluded his second volume of "Napoleon and his Marshals."

Upon the whole, the book is so compounded of faults and merits, that, like the author, we hesitate to pronounce as to whether the good or the bad predominates. Perhaps, if a division be made at Brumaire, the first part of the work will be found as trustworthy a manual of the Revolution as we possess, while the latter part requires to be read with the greatest caution by those who are not already familiar with the history of the events it relates.

PHILOSOPHY.

The Scottish Philosophy—Biographical, Expository, Critical—from Hutcheson to Hamilton. By JAMES MCCOSH, LL.D., D.D. 8vo, pp. 481. New York: Robert Carter & Bros. 1875.

WHILE containing nothing particularly novel or original, this book will possess attractions for those who are interested in Scottish philosophy: and the biography of such writers as Francis Hutcheson, Adam Smith, Thomas Reid, Dugald Stewart, Thomas Brown, Francis Jeffrey, Thomas Chalmers, John Abercrombie, John Wilson, and Sir William Hamilton, cannot fail to interest all readers who have a taste

for philosophical studies. The work opens with an account of the characteristics of the school, namely, its strictly inductive character, extending to mental philosophy the system applied by Bacon to physical science, and its employment of self-consciousness as the instrument of observation, in that way reaching principles which are prior to and independent of experience. The Scottish philosophy, it may also be remarked, differs from other schools in that it is essentially religious, at least, is on the side of religion; and presents a marked contrast to the infidel philosophies of France and Germany. Then follows an account of the state of Scotland, political and social, during the two centuries which preceded the rise of the philosophical schools; the profligacy and infidelity which had become rife during the reigns of the later Stuarts; the struggles of the dissenting clergy against the English establishment; and the disturbed condition of the country after the Revolution of 1688, and which continued through the reigns of the first two Georges, the religious feelings of the people being with the established government, while their political sympathies were, to a great extent, with the exiled Stuarts; and the comparatively low state of education and refinement as late as the beginning of the eighteenth century. The union of the Scottish and English crowns gave a stimulus to the national intellect, which had been chastened and matured under its trials and struggles, and enabled it thus to produce the fruit which appears in the philosophy of the present day.

Although Hutcheson is generally considered to have been the founder of the Scottish school, his views were largely influenced by the philosophy of Shaftesbury, to whom accordingly a chapter of the work is devoted. Carmichael is mentioned as

'The bond which connects the old philosophy with the new in Scotland."—p. 36.

and Baxter is not recognized as a leader or follower of the Scottish school. Hutcheson's philosophy, although imperfect, was a great advance upon the theories of Locke, which had at that time taken possession of England. Turnbull, the founder of the Aberdeen school, though little known at present, exercised a powerful, though indirect influence on philosophy through the writings of his pupil, Thomas Reid, one of the leading names in Scottish philosophy. The skepticism of Hume is shown to have indirectly produced a good result by awakening in opposition to it the energies of Reid and Kant. Adam Smith, though included in the list of philosophers, was much less eminent in metaphysics than as a writer on political economy. Lord Kames, by his theory of philosophical necessity, brought on himself a charge of skepticism which the facts do not appear to warrant. The name of John Witherspoon is connected with this country by the fact that he was one of the earliest presidents of Princeton College, and a signer of the Declaration of Independence. Thomas Reid is pre-eminently the rep-

resentative Scotch philosopher, and, if not the father, at least the principal exponent of the common-sense theory, which may be considered as having, under his exposition, created an era in the history of philosophy. Dugald Stewart carried out the principles of Reid, and, though inferior in originality, rendered his philosophy more acceptable by his graceful and scholarly exposition of the great master's principles. Thomas Brown still further extended the system, and developed the theory of intuitions. His works, however, with all their excellencies, are disfigured by grave omissions and crudities. Francis Jeffrey was more eminent as a reviewer than as a metaphysician, and we must confess ourselves at a loss to understand why the name of Lord Brougham appears in the work at all. Chalmers has been most successful in reconciling philosophy with religion; and Abercrombie in his "Intellectual Powers" has popularized the subject, and rendered it interesting and comprehensible to the ordinary reader. The series appropriately closes with Sir William Hamilton, who is justly styled the most learned of all the Scottish metaphysicians.

Of the work, as a whole, we may say that it maintains a generally uniform level, neither rising into elevation nor sinking into inferiority. Without telling those who have given much attention to the subject any thing which they did not know already, it furnishes a convenient compendium of information for the general reader who may feel an interest in the Scottish philosophy.

The Drift of Medical Philosophy. An Essay. By D. A. GORTON, M. D. 16mo, pp. 70. Philadelphia: J. B. Lippincott & Co. 1875.

ALTHOUGH in form but a *brochure*, this essay contains much matter which is at once instructive and interesting, not only to the student of medicine but to the general reader. It is divided into three parts: 1. The Legitimate Primacy of the Medical Art. 2. The Rise of Illiberality in Medicine. 3. The Position of Homœopathy in Medicine. Under the first heading the theory is ably sustained, that many, if not all, cases of crime and moral obliquity are the results of physical derangement; that what is called sin—that is to say, the class of morbid phenomena which occur in individuals whose bodily and mental soundness are beyond suspicion—arises from the disproportionate size and activity of the bodily and mental functions.

"If one organ in the mental economy be preternaturally developed, others are necessarily impoverished and weakened. The principle is as applicable to the economy of mind as it is to that of muscle."—p. 13.

This class of morbid psychological phenomena are contrasted with those which are inconsistent with mental soundness, and proceed from nervous disease. The latter class, in reality, embrace many cases which

are erroneously attributed to the former, and many of the crimes punished by society have undoubtedly resulted from a predisposition occasioned by physical disease. Victims belonging to this class, when fairly traced to their origin, society recognizes the impropriety of punishing; but the Essay before us very strongly urges the theory that moral phenomena of the first class, commonly called sins or crimes, have, to a great extent, their origin in physical causes, or in the language of the author,

"That moral evil and physical disease may have a common origin, and, consequently, common laws of cure; and that a medicine that can cure the one may be equally beneficent upon the other."—p. 34.

Whether or not the reader may be disposed to accept this theory to the full extent announced, it is impossible not to recognise the force of the argument; and to accept the inference that it is highly desirable that reformatories should, in many instances, take the place of prisons.

The remaining divisions of the Essay are directed against the illiberal spirit, which, placing its whole faith in a certain specified system of therapeutics, obstinately refuses its adherents the use of any remedies which do not fall within the pale of that system. From this illiberality it shows that homœopathy is not exempt; and concludes with a few words of sound advice, which all physicians, homœopathic as well as allopathic, would do well to consider.

"Let us remember that science is of Heaven, and needs no apologies from individuals for its failures and defects. Medicine is divine, and under the thumb or responsibility of no man. It belongs to the race—to mankind. Homœopathy may be too narrow and circumscribed, but medicine is broad enough, I am sure, to supply every deficiency; and he dishonors himself and violates a sacred trust who, failing the proper specific remedy, or doubting its fulfilling the requisite indications in a given case, does not avail himself of all the resources of medical science and art, regardless of pathies and therapeias."—p. 66.

Indeed, were we to extract every thoughtful, striking passage in "Medical Philosophy," there would be little left. It were superfluous to add to this any recommendation as to its careful perusal.

Outlines of Cosmic Philosophy, based on the Doctrine of Evolution, with Criticisms on the Positive Philosophy. By JOHN FISKE, M.A., LL.B. 2 vols., 12mo. Boston: James R. Osgood & Co. 1875.

THIS, although a valuable work, has the usual defect of philosophical treatises that, while setting forth elaborately what cosmical philosophy is *not*, it leaves us quite in the dark as to what it *is*. Although in reading the introductory chapters we cannot fail to be impressed with the justice of much of the argument, we are left at the close in a most distressing state of uncertainty as to the conclusion at which we have arrived. In

other words, although the steps up the hill of knowledge are very clear and well defined, the mountain-top is still shrouded in mist.

Sometimes Mr. Fiske seems to wish to convince his readers that they are unable to *conceive* any thing, that every so-called conception leads us into inextricable labyrinths, and that our conceptions are therefore mere postulates which we assume from necessity without comprehending them. For instance,

"In spite of their great apparent diversity, the atheistic, pantheistic, and theistic hypotheses all contain, in one form or another, the same fundamental assumption. Sooner or later they all require us to conceive of some form of existence which had neither cause nor beginning; *and to do this is impossible*."—vol. i., p. 8.

Yet, in a subsequent chapter, entitled "The Test of Truth," the conclusion is reached that

"This test of inconceivability is the only ultimate test of truth which philosophy can accept as valid."—*Ib.*, p. 60.

Let us apply this test to the three hypotheses above referred to, one of which must be true, since every thing must be either self-existent, self-created, or the work of a Creator. Now, all these hypotheses have been pronounced inconceivable; in what manner, then, shall we apply to them the test of truth?

This is only one instance of the labyrinths into which a certain sort of philosophical researches seems almost inevitably to lead even acute and logical minds. We have a further instance of the same in the discussion of the much-vexed question of phenomenon and noumenon, which, by the way, is not very satisfactorily settled. In illustrating the relations between substance and accident, we are informed that

"What we mean by a tree is merely a congeries of qualities that are visual and tactual, and perhaps odorous, sapid, and sonorous. If we were destitute of sight, touch, smell, taste, hearing, and muscular sensibility, all these qualities would cease to exist, and therefore *the tree would cease to be tree*."—vol. i., p. 80.

Not at all; for, supposing us to lose all power of perception of any of its qualities, it must still exist to us as an object which prevents our occupying a certain amount of space. We would know of its existence from the impossibility of walking through it. It is curious how the very depth of philosophical research will lead the inquirer to overlook simple explanations which may be said to lie on the surface. For instance, the chapter devoted to "Causation" is introduced with the following illustration:

"We believe that, in the absence of preventive conditions, fire must always and everywhere burn, because our concept of fire is the concept of a thing which burns, and this concept has been formed exclusively by our experience of fire."—p. 146.

The mediæval philosopher who believed fire to be *a thing*, and to

constitute one of the four elements, may have had this reason for *believing* that it would burn; but the modern student of natural science knows that fire will burn because what we term fire is the simple act of combustion, and that the phenomena of light and heat which we associate with the idea, and to which we give the name of fire, are the results and evidences of such combustion and not its causes.

But it is when philosophy comes to deal with the questions of Divinity and the origination of animal and vegetable life—the finite striving to comprehend the infinite—that it involves itself in the most hopeless contradictions and entanglements. This work, going into the subject of the beginnings of life, discusses extensively the question whether man, as the perfection of animal life, and of course the inferior orders likewise, are the result of special creation, or of a process of derivation whereby the higher genera have been evolved from the lower; and decides emphatically in favor of the doctrine of derivation. At the same time, it affirms in strong language the existence of a Deity.

We are thus brought to the conclusion that, while there is a Deity—a Supreme Creator and Originator of all animal and vegetable life—yet that the method of this creation, which is recognized in every tradition or revelation, real or pretended, is a mere fiction; in other words, that we are entirely without revelation, and that the Deity, who has, it is conceded, created the universe, and who continues to control it, and is manifested in all its phenomena, has left that creation in a state of utter ignorance explainable only on the assumption of total indifference to it. This is a state of things more difficult to conceive—if the test of truth be, as this work represents, conceivability—than the most far-fetched assumption which the believer in the doctrine of special creation may be compelled to maintain, in order to reconcile his theories with the discoveries of science.

EDUCATION.

1. *A Grammar of the Hebrew Language.* By WILLIAM HENRY GREEN. 8vo, pp. 106. New York: John Wiley. 1874.
2. *An Elementary Hebrew Grammar, with Reading and Writing Lessons and Vocabularies.* By WILLIAM HENRY GREEN. 16mo, pp. 194. Same publishers. 1874.

THE students of Hebrew should feel much obliged to author and publishers for these two volumes—especially for the first, which has the advantage of combining to a considerable extent the systems of Gesenius, Euclid, and Nordheimer, and has succeeded, perhaps more effectually than any of its predecessors, in clearing away many of the difficulties with which the study of the language is beset. These difficulties, in fact, are not generally inherent, but proceed from the circumstance that Hebrew is, and has for a long time been, a dead language; and also to quote from the work itself—

"By its belonging to a different family or group of tongues from our own, possessing sounds entirely foreign to the English, for which it consequently affords no equivalent, and which are, in fact, incapable of being pronounced by our organs."—p. 2.

The structure of the language is extremely simple, and its system of conjugation and declension, forming modes and tenses, and indicating gender, number, and case, by prefixes and affixes, renders it comparatively easy to acquire and retain.

A valuable feature of this Grammar is the insertion of notes, which explain many peculiarities calculated to puzzle the student—for instance, the number of letters having the same English equivalent. Thus שׂ, *sin*, with the Daghesh *lene*, is in sound identical with ס, *samech*, both indicating the sound of our *s* or soft *c*. So with ה, *he* and ח, *heth*, כ *kaph* and ק, *koph*. The utility of these cognate letters appears from the fact that a change in the signification—usually a modification of the sense—is often made by substituting one for the other. Thus הָיָה, *hayah*, to be, is turned by the substitution of ח into חָיָה, to live, whence is derived the name Eve, properly *Eica* or *Aica*. הֵקִיו, *hikev*, to make straight, is changed by פ into הֵפִיו, to straighten the beam of a balance, to weigh. שָׂכַל, *sakal*, to be wise, has its sense, though not its sound, reversed by ס and becomes סָכַל, to be foolish. We do not remember to have seen this use so clearly set forth in other grammars.

The triple division of the vowels is adopted from Ewald, and is a more correct classification than the double. Hhirik, Shurek, and Kibbuts, are placed in a class by themselves, as doubtful vowels, being used indifferently, Hhirik for the long and short *i*, and the others for the long and short *u*. The rule for determining their quantity, and also for distinguishing Kamets, the long ā, from Kamets Hhatuph, the short ŏ, both of which are represented by the same vowel point, is very clearly and comprehensibly given.

While the grammar before us is in general deserving of praise for accuracy and research, it is to be regretted that such blunders should have been allowed to creep into the notes, as the following:

"The Greeks dropped ו and ק, only retaining them as numerical signs, while the Roman alphabet has F and Q; on the other hand the Romans found מ and ס superfluous, while the Greeks made of them Σ and ξ; ג and ר, in Greek γ and ζ, become in Latin C and G; while ח, in Latin H, is in Greek converted like the rest of the gutturals into a vowel η."—p. 9.

It is surprising to find so many errors in one short paragraph. The Roman F is not an equivalent of the Hebrew ו but of פ and of the Greek φ; ξ is not an equivalent of ס or of any Hebrew letter, but corresponds with the Roman X; ζ does not find its counterpart in the Latin C, but in Z, C soft being the equivalent of ס; ח is sometimes converted into the Greek η, but oftener into an aspirate (ʽ), and sometimes even into ε, instance חַוָּה, *Eva*, Eve.

This grammar is, on the whole, better adapted for the use of advanced scholars than for beginners. Knowledge is too often taken for granted on the part of the learner, and terms used before their signification is explained; for instance, the term Methegh is used as early as page 25, while its definition is not given until page 60. The same remark might be made of the introduction of the term Daghesh, and sundry others.

But these deficiencies are to a great extent supplied in the Elementary Manual, which is peculiarly adapted to the wants of beginners. It contains the simple and essential features of the grammar under their proper headings, with exercises in each department, and lessons in reading and writing Hebrew. We have no doubt but that this little volume will prove of great utility, and supply a want which has long been felt in the study of Hebrew.

But the two grammars should accompany each other, since what is wanting in one is supplied in the other; what one merely alludes to the other fully and lucidly explains.

Douglass Series of Christian, Greek, and Latin Writers, for Use in Schools and Colleges.

1. *Latin Hymns with English Notes, for Use in Schools and Colleges.* By F. A. MARCH, LL. D. 16mo, pp. 333. New York: Harper & Brothers. 1874.
2. *The Ecclesiastical History of Eusebius. The First Book and Selections. Edited for Schools and Colleges.* By F. A. MARCH, LL. D. *With an Introduction by* A. BALLARD, D. D., and *Explanatory Notes by* W. B. OWEN, A. M. 16mo, pp. 279. Same publishers. 1874.

WE are glad to see a Pennsylvania college taking the lead in introducing to the American public, and adding to the usual collegiate course, a class of literature hitherto little studied, but replete with beauties, and of unquestionable value in an historical, biographical, and literary point of view. The volumes now before us owe their origin to an endowment by Mr. Benjamin Douglass for the study of what may be called the Christian Classics, in Lafayette College. That institution certainly deserves high praise for this new vein of literature which it has opened to the public, and our warmest thanks are due to Professor March for the thoughtful manner in which he has prepared the volumes that open the series. The Professor is not altogether a stranger to the studious reader. We recognize him as the author of a Comparative Anglo-Saxon Grammar, which has already an extended reputation; and the taste and erudition displayed in the two present works offer the highest promise for the character of the series.

For the introductory volume a happier selection could not have been

made than the Hymns of the Christian Church. The peculiar beauty of many of these has long rendered them favorites; and even those who have never met with the originals will be acquainted with the versions which have become of familiar use in our various hymnals. For instance, comparatively few readers may know the beautiful hymn of Bernardo di Clugny, entitled *Laus Patriæ Cœlestis*, and beginning

"Hic breve vivitur, hic breve plangitur, hic breve fletur,"

but every one will recall the favorites "Jerusalem the Golden," and "For thee, oh dear, dear Country," which have been made household words through the medium of Hymns ancient and modern.

Few, again, of those who unite in the sublime hymn known as the *Te Deum*, can form any idea of its beauty in the original Latin; and those, who have enjoyed the music of the *Stabat Mater* in the concert-room, will find increased enjoyment in the immortal verse to which it is wedded.

This collection introduces us to many beautiful hymns with which we are less familiar, but which are not less worthy of our acquaintance. Such are the Augustinian hymn, *De Gaudiis Paradisi*, of which the triple metre is of unusual beauty.

"Ad perennis vitæ fontem mens sitivit arida;
Claustra carnis præsto frangi clausa quærit anima;
Gliscit, ambit, eluctatur exul frui patria."—p. 45.

And the "sweet and cheering Easter hymn," as Schaff styles it, entitled *De Resurrectione Domini*, and commencing

"Pone luctum, Magdalena!
Et serena lacrymas:
Non est jam Simonis coena,
Non cur fletum exprimas,
Causae mille sunt lætandi,
Causae mille exultandi."
Halleluia!

Although the collection as a whole is remarkably copious, there are one or two well-known and beautiful hymns which we are sorry to miss from it. Such are *Jam lucis ortu sidera*, and *Adeste fideles*, which is so general a favorite, both in its Latin and English dress, that we wonder how it should have been overlooked.

The text of Eusebius, having been revised and amended by Scaliger and others, is comparatively free from the corruptions which, during the Middle Ages, crept into the text of many of the early Christian writers. The selections in this volume are judiciously chosen, being those which, in the words of the preface, relate—

"To the lives of the Apostles and other persons mentioned in the Bible, to the history of the Apostolic, or other inspired writings, the fate of Jerusalem, the great persecutions, the acts of martyrs, and the life and manners of the early ages."

These are enough to render the study of the ecclesiastical historian

highly interesting to the Christian scholar, and afford abundant reason for the selection of this author for the second volume of the series. Professor March has enhanced the value of his edition with copious and instructive notes, and added a Life of Eusebius, abridged from the Introduction of Dr. William Bright, Regius Professor of Ecclesiastical History at Oxford.

Altogether, these books will prove a most welcome addition to our educational libraries. We shall be glad to see the example set by Lafayette College followed by other colleges, and the study of the Christian, Greek, and Latin writers become a part of the recognized curriculum.

Outlines of the World's History, Ancient, Mediæval, and Modern, with Special Relation to the History of Civilization and the Progress of Mankind. By WILLIAM SWINTON. 18mo, pp. 498. New York and Chicago: Ivison, Blakeman, Taylor & Co. 1874.

WE have here another specimen of the "Great American Educational Series"—that wonderful collection of spelling-books, geographies, and histories, which is modestly assumed to embrace all the learning necessary to qualify the youth of America for the highest offices in the State. It is true that the publisher's claim to have issued the only series of educational works for the youth of this Republic is boldly confronted by another publishing-house, who offer in their announcement the "Great National Series." Who shall decide betwen two such paragons? for, it will be observed, each is claimed to be *the* educational series of the country. Perhaps the surest way would be to examine some of the issues of each as they are given to the public; and, if the result is only an illustration of the adage

"Parturiunt montes, nasciturque ridiculus mus,"

why, the publishers can blame only their own pretensions.

To one acquainted with the requirements of an historical work, and especially a work designed for educational purposes, there is something irresistibly ludicrous in the idea of the History of the World being compressed into a volume of this size. Still, in these days and this country, when expedition is made of so much account, and thoroughness of so little, when it is at times gravely proposed to teach the modern and even the ancient languages in a course of six lessons each, the title of a work which promises to impart so much information within so small a space may have its attractions, not only for the impatient reader, but for the teacher whose principles (or want of principles) induce him to consider the facility of imparting information rather than the value of the information when imparted. For these reasons it sometimes becomes a duty to examine seriously the pretensions of a performance which might otherwise be dismissed as unworthy of notice.

To the superficial reader, who might in the first instance be decoyed by the seeming promise of the title, we would say, in the first place, that this book is *not* a universal history. It is a mere scant compilation of various facts (and fictions) relative to certain branches of the Caucasian race, leaving out of the record entirely such unimportant regions as China, Japan, India, and the entire American Continent! Turkey and Western Asia fare little better, perhaps because, according to this veracious historian, "the Turks were Mongols or Tartars" (p. 218). This is of a piece with the assertion that "Central Asia was called by the ancients Scythia" (p. 8). The Asiatics, Mongols, or Tartars, are not allowed by Mr. Swinton to be descendants of Noah—as he includes the offspring of Shem, Ham, and Japheth, all in the Caucasian race (p. 2). We must, therefore, infer that the ancestors of the bulk of the present population of the world either escaped the operation of the universal deluge, or were subsequently recreated in some miraculous manner—possibly by throwing stones after the fashion of Deucalion and Pyrrha. The question, Is man one or many? has been for some time seriously discussed; but our historian and instructor of youth has apparently settled it to his own satisfaction. A still more remarkable discovery is contained in the assertion that

"The great feature of *all* the Oriental nations is their *unprogressiveness*" (p. 72).

It may suggest itself to the reader that, of the four great empires of history, two, the Babylonian and the Persian, arose in the East; that the Phenicians were the pioneers of navigation, commerce, manufactures, and literature; and that to the Arabians we are indebted for most of our exact sciences. He may consider these facts as indicating considerable *progressiveness* among the Oriental nations, but he will be wrong—that is, if Mr. Swinton be right.

The portion of this performance devoted to Ancient History is, in fact, a mixture of guess-work and vague tradition, all of which our author has presented as so much undoubted history.

As to the Aryan emigration into Europe, our author manifests a remarkable confusion of ideas; and, as to who were or were not Aryans, he promulgates his views with the same charming disregard of fact as on the subject of the Oriental nations. Of the Pelasgi, a race of whom nothing is known beyond what may be inferred from their architectural remains, he says:

"In the ante-Hellenic period, that is, in the pre-historic age, we hear of the Pelasgi, who *seem* to have been an Aryan race!"—p. 77.

While of the Etruscans—a nation whom both Roman history and their own monuments show to have been a race advanced far beyond the other inhabitants of Italy, and to whom Rome was indebted for so small portion of her civilization—he tells us that

"The Etruscans do not appear to have been Aryans at all," etc.—p. 131.

Were this the case, it would effectually disprove Mr. Swinton's own statement that "the Aryans were peculiarly the race of progress" (p. 4), for here is a race to whom he denies an Aryan parentage, whose progress in many respects distanced all their contemporaries. Witness the arches, aqueducts, and bridges, of which traces remain to this day.

After this it appears hardly worth while to dwell on such specimens of history as that the Huns were Tartars or Kalmucks from Eastern Asia (p. 208); that Artemis or Diana was the divinity of *flocks* (p. 116); that gross superstitions were practised in the Eleusinian mysteries (p. 117); and that the Romans wore a mantle of warm-colored cloth called "pallium" *or* "lacerna" (p. 202).

The Jugurthine War, the War against the Cimbri, and the Social War, are passed over as matters "with the details of which we need not concern ourselves." The Eastern or Byzantine Empire is quietly set aside as devoid of progress and having no influence. Although Constantinople preserved the learning of ancient Rome through the dark ages, although Justinian established a code which forms the basis of European law in the present century, although the re-conquest of Rome by Justinian gave the first impulse to the growth of Western civilization, and although the ultimate revival of literature and the arts in Europe is mainly due to the learned men who came thither from Constantinople after its capture by the Turks, we are gravely told that progress did not exist in the Eastern empire!

Matters are not much improved when we come to modern and familiar history. Here, among other astounding pieces of information, we learn that, "With the deposition by Parliament of Richard II., the Plantagenet line *went out.*" As if the three Lancastrian kings—the son, grandson, and great-grandson, of John of Gaunt—were not as fully Plantagenet as the king whose throne they occupied; and as if the Duke of York and his descendants, who conquered back the throne, were not of the lineal Plantagenet line.

In short, works of this class are in every sense impositions. By pretending to render learning easy, they catch the fancy of school-boys, and (we regret to say it) of many unprincipled teachers. By their means false impressions are disseminated, and a mere smattering allowed to usurp the place of solid learning. They are as pernicious in their influence on the mind as the nostrums of quack doctors in their effect on the body; and should be weeded out of educational institutions as ruthlessly as the poisonous plant from the garden or the noxious drug from the domestic roof.

German Universities: a Narrative of Personal Experience, together with Recent Statistical Information. Practical Suggestions, and a Comparison of the German, English, and American Systems of Higher Education. By JAMES MORGAN HART. 16mo, pp. 398. New York: G. P. Putnam's Sons. 1874.

THE imprint on this volume recalls the name of one to whose taste and judgment as an intellectual caterer the present generation of Americans owe much. A man of fine culture, himself, and possessed of literary abilities of no mean order, to the late Mr. George P. Putnam is due the credit, not only of having presented to the public an extensive variety of works of permanent value, but the still greater credit of having rarely, if ever, placed his imprint on a work which did not possess real merit, or whose tendency was not good. We are glad to see that his sons are disposed to emulate his example in these respects, although we have to make some criticisms on a portion of their present issue.

The "experiences" related in the first part of this work partake so extensively of the "personal" character, that they cannot be said to possess much interest for the general reader. The incidents related are by no means so amusing as the author appears to consider them (p. 31); and his experience of the study of the German language is not particularly calculated to benefit the reader. Mr. Hart matriculated at Gottingen mainly for the purpose of acquiring the language; so he tells us that,

"Not having any inspirations after medical, theological, or legal attainments at that time, in fact, not having any plan of study beyond mastering the language and literature, I had myself entered in the philosophical faculty."—p. 47.

It is to be feared that, in his devotion to the language which he sought to acquire, he occasionally forgot the vocabulary and syntax of his mother tongue. In no other way, for example, can we account for his unwarranted use of the word *notorious* in the following passage:

"The nephew of one of the most *notorious* and influential generals in the Prussian service."—p. 81.

or for his perpetual use of the word *duel* as a verb; instance the following:

"German students *duel* for the same reasons that lead German officers, journalists, noblemen, and others of the *genus irritabile*, to resort to arms, namely because they regard it as the only dignified and *gentlemanly* way of resenting an insult."—p. 77.

Student duels, it may be remarked, do not generally involve very serious results. The combatants are padded and spectacled; at the first wound, or appearance of a wound, the seconds separate them, and the doctor makes his examination. Under these circumstances, it is not strange that

"They *duel* (*sic*) so much, and on such frivolous pretexts, that the impartial observer must accuse them of fighting simply because they like to fight."—p. 78.

Our student appears to have been rather of the rolling stone order. In 1863 he removed to Berlin, and concluded to study law. By this time

"Three semesters had already gone—one in learning the language, one in studying the literature, the third in enforced idleness."—p. 106.

This change of resolution is made the text for a dissertation on German law, which is continued in a somewhat rambling manner throughout the first part of the book.

Mr. Hart returned after six months to Gottingen, rather disgusted with his Berlin experiences. Here he continued his law studies, and favors the reader with his views on the institutes, the paudects, and finally a *résumé* of the dissertations which he prepared on questions of law propounded to him, and specimens of the questions and answers at his final examination. It is satisfactory to learn from himself that our student acquitted himself with credit, and received the second degree, *vera cum-laude*.—p. 235.

The second part, entitled "General Remarks," is far more interesting. The object of this part is to point out the distinguishing peculiarities of the German university system, and to indicate in what respects it might furnish good models to our American colleges. The question "What is a University?" seems to have been carefully investigated, and an answer is furnished which may serve as a useful hint for the conduct of our institutions.

The quality of university education, then, is determined by its object; and that object is to train not merely skilful practitioners, but also *future professors*. —p. 257.

The requisites of a professor in a German university are calculated to ensure the continuance of the high standard to which these universities have attained. A professor must have risen through all the gradations of gymnaziast, student, *privatdocent* in a special branch, *ausserordentlicher* or assistant professor, and finally *ordentlicher* or regular professor.

"During these successive stages as student, *privatdocent*, *ausserordentlicher*, *ordentlicher* professor, he has not made a single change in his line of study. He has been throughout an orientalist, a classic philologist, a mathematician, a chemist, an historian, or a theologian. His time and energies have been devoted exclusively to one limited branch of investigation, with a view to making discoveries." —p. 265.

He is also obliged to keep up with the times. If he fall behind and represent the state of investigation only as it was five or six years ago, the students desert him for a younger man.

The book gives a full account of the *privatdocent*, which is a peculiar feature of German universities. He is not a tutor, as we understand the word. Before he can be licensed to teach he must have qualified to an

extent beyond that of most professors in American colleges. When he has received his *venias docendi*, he is then authorized to lecture in the university rooms. But, in practice, he advises with and assists the students and gives them private instruction, while he keeps the professors up to the mark by competition. With such a rival on his track, always ready to lecture on the same, or even higher, subjects, no professor, however eminent, can safely rest from his labors. Progress must be the rule to the end of his career.

After a comparison of the *status* of the German student with that of the American collegian, and an account of the discipline practised in the universities, which is interesting because novel to most American readers, the author proceeds to a comparison of the German university system with those of England and America. The superiority claimed for German over English universities may, perhaps, startle the American reader, accustomed to regard the latter with peculiar reverence; but the justice and force of the argument cannot be denied. As to the American college system, its inferiority, as a rule, has never been disputed. Our people have hitherto contented themselves with the remark that, in the present condition of the country, nothing better is attainable. This argument is here confuted, showing how a much higher standard in our colleges may be attained; first, by State recognition of the colleges, and by making a collegiate degree a pre-requisite to admission to the learned professions; secondly, by judicious economy, investing less money in architecture and more in professor's salaries; and thirdly, by adopting a uniform system of discipline akin to that of the German universities.

Although, as we have intimated, Mr. Hart is rather egotistic, and allows himself to be influenced far too much by his vanity, at the same time he presents facts and statistics in regard to the German colleges, schools, etc., which claim the attention of all friends of American education. It will be seen that he corroborates several of the statements we have made in our educational discussions as to the restrictions placed in Germany on those who would pretend to teach others what they are ignorant of themselves.

BELLES-LETTRES.

Une Fantaisie du Docteur Ox—Maître Zacharias—Un Hibernage dans les Glaces un Drame dans Gair. Par JULES VERNE. 18mo., pp. 304. Paris: J. Hetzel et Cie. 1874.

THE author of this work will be remembered as having written a novel which created considerable sensation a year or two ago, entitled *Le Tour du Monde en quatre vingt jours*, being the adventures of an eccentric Englishman who, for a wager, undertakes to make the tour in

that space of time, which he accomplishes, but so narrowly, that he arrives in London under the impression that he is a day behind time, having forgotten to take into consideration the day which is gained in a tour of the world from West to East. These new stories are very much of the same character—terse, brilliant, going to the very limits of probability, but never introducing an incident which is not physically possible—except in the story of Maître Zacharias, which purports to be an old time legend, and in which the supernatural element is distinctly introduced—and maintaining throughout a consistency which deprives them of much of their extravagance, and even gives them an air of probability.

It is, for example, morally impossible that any philosopher should take the trouble, for the sake of an experiment, to saturate the atmosphere of a town with oxygen, which experiment is the main-spring of the story of Le Docteur Ox. But assume this fact, and we cannot but admit the naturalness of the machinery employed, and the logical sequence of the events produced.

Doctor Ox experiments on the drowsy little Flemish town of Quiquendone, an imaginary locality, of course, but so graphically described in all its details, that it is difficult not to imagine that the town actually exists; a town whose one distinguishing characteristic is its intense stagnation.

"Une ville où depuis un siècle il n'y a pas eu l'ombre de discussion, où les charretiers ne jurent pas, où les cochers ne s'injurient pas, où les chevaux ne s'emportent pas, où les chiens ne mordent pas, où les chats ne griffent pas! Une ville dont le tribunal de simple police chôme d'un bout de l'année à l'autre! Une ville où l'on ne se passionne pour rien, ni pour les arts, ni pour les affaires! Une ville où les gendarmes sont à l'état de mythes, et dans laquelle pas un procès-verbal n'a été dressé en cent années! Une ville enfin où depuis trois cent années, il ne s'est pas donné un coup de poing, ni échangé une gifle."—p. 23.

The doctor proposes to himself to excite these apathetic people, whom he describes as "midway between sponges and coral excrescences," into an unnatural state of life, irritability, and vigor, by saturating with oxygen the atmosphere in which they live. For this purpose, he makes a proposition to light the town at his own expense with oxyhydric gas. Under this pretext he has laid pipes in all the streets, and established communications with all the public buildings and private houses—but instead of introducing the gas through these pipes, he contrives to issue volumes of pure oxygen, obtained from the decomposition of water—which, being specifically heavier than atmospheric air, gradually fills all the lower strata of the atmosphere. Could any thing be more logical? Of course the effects can be produced by gradual stages only, as it requires considerable time to manufacture a quantity of oxygen sufficient to replace the atmosphere of an entire town. The first effects are experienced at the residence of Doctor Ox himself, where the

visitors become unaccountably irritable and quarrelsome, an irritability which marvellously subsides the moment they emerge into the open air. The next experiment is at the theatre, where the whole community have assembled to hear the fourth act of Les Huguenots, it being the custom at the slow town of Quiquendone never to present more than one or at most two acts of an opera on any one evening. Here, the atmosphere having been effectually oxydised, the *andantes* become *allegros* and the *allegros vivaces;* the singers become excited and hurry through their parts at such a rate that the performance, which habitually lasted six hours, is concluded in eighteen minutes ; the audience

"Haletant, enflammé, gesticule, hurle ! Toutes les figures sont rouges comme si une incendie eut embrasé ces corps á l'interieur. On se brosse, on se presse pour sortir, les hommes sans chapeau, les femmes sans manteau ! On se bouscule dans les couloirs, on s'écrase aux portes, on se dispute, on se bat ! Plus d'autorités ; plus de bourgmestre. Tous égaux devant une surexcitation infernale. Et quelques instans après, chacun est dans la rue, chacun reprend son calme habituel et rentre paisiblement dans sa maison, avec le souvenir confus de ce qu'il a ressenti."—p. 47.

Henceforth the same excitement is visible in all the public edifices ; discussions degenerate into disputes ; heads become heated and personalities are used (p. 51) ; still the private life continues as inert as ever. By degrees, however, the same symptoms appear in private houses; and finally extend into the streets and gardens. Even the vegetables and other plants grow to enormous size, intoxicate the atmosphere with their perfumes, and wither before they are plucked up. Animals become refractory and the population disorderly. Everywhere is excitement, riot, and confusion. At last, unable to contain their passions within the limits of their community, the Quiquendonian's declare war against a neighboring city, Virgamen. The troops are called out, and even the women and children fall into the ranks, and constitute the rear guard of the army. But, as they are moving to battle, an explosion resounds ; the atmosphere seems on fire ; the entire army falls to the ground. An accidental communication between the reservoirs has produced an explosion, and the gas-works are blown up. This, of course, concludes the experiment. The army disband without explanation, and Quiquendone becomes once more a peaceable, phlegmatic Flemish town. The moral is very terse :

"En résumé, et pour conclure, la vertu, le courage, le talent, l'esprit, l'imagination, toutes ces qualités, ou ces facultiés, ne sont-ils donc qu'une question d'oxygène ?"—p. 89.

It will be seen that this work, with all its humor, brilliancy, and *vraisemblance*, is so tinctured with extravagance as to produce the effect of burlesque. This is a serious fault which pervades the entire work. The slowness of the Quiquendonians (which seems designed indirectly to denote the whole Flemish people) is overdrawn, and the idea of

a *casus belli*, which has slumbered for nearly seven hundred years, to be revived under the excitement produced by Dr. Ox's experiment, is an extravagance overstepping the allowable limits of caricature. The result is that the story of Le Docteur Ox occupies very much the position among works of fiction, that is assigned to a clever *opera bouffe* in the domain of art—a position altogether unworthy of the author's abilities.

MISCELLANEOUS.

An Encyclopædia of Practical Receipts and Processes, containing over 6,400 *Receipts, embracing thorough information, in plain language, applicable to almost every possible industrial and domestic requirement.* By WILLIAM B. DICK. 8vo, pp. 607. New York: Dick & Fitzgerald. 1874.

THIS work contains a large amount of information useful to housekeepers—being a collection of various processes in domestic chemistry, by a judicious study of which much expense may be saved. It will be particularly useful to persons residing in the country at a distance from the ordinary dépots of trade, as it contains instructions for the manufacture of most of the household appliances which are constantly in demand, and for want of which the domestic machine often comes to a stand-still.

Its utility is not, however, confined to household purposes. It contains many receipts, by the aid of which the small shop-keeper can stock his store at comparatively little expense—such as for the manufacture of glass, perfumes, pigments, etc., and directions for electroplating and photography. This Encyclopædia is, therefore, calculated to be of use not only in the family, but also in the laboratory and workshop. Its utility is further increased by the introduction of tests, by which the quality of the subjects brought into requisition can be ascertained, and also by which adulterations can be detected in articles purchased for family use.

The use of the work is facilitated by a complete index, which enables the reader to find each article under its proper heading; but the receipts are classified, and a table of contents indicates the position in the volume of each separate class. Where necessary, the instructions are explained by neat diagrams or illustrations. To this we need hardly add that we can recommend the work to every one interested in domestic affairs, or engaged in the ordinary mechanical arts, as a useful hand-book.

A New Wall Map of Connecticut. Philadelphia: J. H. Butler & Co.

WE know of no other map of Connecticut that approaches this in all that renders a map at once useful and ornamental. It is on a large scale (35 x 68); the paper is strong and fine; it is handsomely colored

and varnished; its durability is increased by a strong muslin back; and it is firmly mounted on rollers.

But better than any of these advantages is its scrupulous, remarkable accuracy. The publishers have long and justly enjoyed the palm of excellence in this mode of communicating knowledge, as well as in that by text-books, in every department of preparatory education; but in the present instance they have made a still further advance toward perfection.

There are none whose attention will be drawn by these remarks to the new map of Connecticut who will not thank us for them, equally adapted as the publication is to the use of the counting-room, the school, and the family.

APPENDIX—LIFE AND FIRE INSURANCE: GOOD, BAD, AND INDIFFERENT.

Insurance Documents of Various Kinds. Reports of Insurance Lawsuits, Amalgamations, etc., etc.

THAT the year which is now drawing to its close has not witnessed much improvement in the prospects of many of our life insurance companies will not excite surprise in any judicious, observant mind. The companies themselves, their agents as well as officers, recognize the fact; but, if called upon for an explanation, they content themselves with attributing it to the hardness of the times, and the universal want of confidence on the part of the public, which has never recovered from the effects of the panic of 1873. Our readers are aware that we hold a somewhat different view of the case. We must look deeper for the causes, and again review the course of events during the past few years to form a just estimate of the present state of public sentiment.

One fact which the intelligent observer cannot fail to remark is that the popularity of life insurance is now suffering, not so much from any general want of confidence as from a particular mistrust of this class of institutions—a mistrust which events have shown to be in many instances only too well founded. Of course, in such cases, the innocent must expect to suffer with the guilty—the unreasoning public, whose faith has been shaken by the career and exposures of some of the most prominent companies, is apt to involve in a sweeping condemnation those worthy of respect and confidence.

For it should be borne in mind, as we have often sought to impress on our readers, that in Insurance, as in other departments of business, a great difference exists between companies. There are those who are as incapable of contesting the payment of a policy which is justly due, or of resorting to any illegitimate device to put money into the pockets of

their directors, as an honest banking association would be of refusing to pay its depositors. To this we have again and again borne ample testimony. But it cannot be denied that the general public is less fair-minded; and it will not create much surprise that those who have suffered and seen others suffer from the unjust conduct of many pretentious companies—who have seen marble palaces arise, and individuals who, but a short time ago, were without a penny, now occupying the position of nabobs from profits which they feel rightfully belonged to the widow and the orphan—should draw conclusions unfavorable to the whole class, and pronounce life insurance but a slippery security.

The practice by which certain plethoric and ostentatious companies have most conspicuously incurred odium, not only for themselves but for others, is the disposition to dispute the payment of their policies, and to litigate on the slightest pretence. With such companies, the one idea, when a life policy falls due, is, how not to pay it? With this object the whole past life of the deceased is investigated; every conceivable imputation which may cast suspicion on his good name or harrow the feelings of his family is sedulously raked up; charges of intemperance, vicious habits, reckless living, chronic disease fraudulently concealed, even of suicide, are hurled at the memory of the unhappy man; and his widow, finding herself confronted with accusations against her husband's name which she never so much as suspected, and led to believe that the companies have proof, of which she knows nothing, in support of their allegations—perhaps fully satisfied of their falsehood, but without the means or the heart to carry on a long litigation—too often thinks it expedient to bury the charges without investigation, and compromise for a mere fraction of her dues. In other words, the company has evaded the payment of its just debts by a simple process of terrorism exercised over the weakest and most defenceless portion of the community.

Another notable engine of oppression in the hands of this class of companies is the mortgage system, that is to say, the manner in which that system is diverted from its legitimate objects to oppress and plunder the poor. Borrowers are in the first instance encouraged in every manner to obtain their loans from insurance companies. They ask no bonus—they never call in their money so long as the interest is regularly paid—and so on with the other inducements which the glib brokers and insurance agents have always ready on their tongue. But let the attempt be seriously made to borrow—and, presto! *nous avons changé tout cela.* A bonus is to be paid to the broker; an enormous fee to the lawyer who is to examine the title; then the applicant is made to understand that, if he would have his application considered, he must effect a policy on his life! In fact, this rule has now become so inflexible that in many of the companies the borrower is required to sign a printed application, stat-

ing that he *holds* a policy in the company from which he desires the loan. Then come the foreclosures. Woe to the unlucky debtor, who has lulled himself with the hope that, so long as his interest is paid on the day, he may count upon retaining his property. Hard times like the present are what certain companies are awaiting; and down they pounce with a demand for the principal at the moment when it is the most difficult to be paid. We all know what follows—foreclosure, and a transfer of the mortgaged premises, at a nominal value, to the company!

But the parties who are usually the severest sufferers are the second mortgagees—parties who have honestly loaned their money on the faith of the broker's assurance that the company never lend on property worth less than thrice the amount of their mortgage, and never call in their loans, etc. Persons are often induced by such representations to lend on property which is really worth little more than enough to save the first mortgagee harmless. Of course, the programme has been arranged beforehand. The interest on the second mortgage is not paid, and the mortgagee is obliged to foreclose and buy the property subject to the first mortgage. At once down comes the insurance company. He is required to give his collateral bond, and make a payment on account, or the mortgage will be foreclosed. The time is well chosen when the mortgagee is heavily out of pocket with his own foreclosure. Of course, the bond is given, and he becomes liable for another man's debt. Little grace does he obtain by this sacrifice. Another year and the company are down upon him again. He has learned by this time the poverty of the security that he has been induced to take on the faith of the company's agents. The result can be told in a few words—foreclosure. The company becomes the owner of the property, and the unfortunate mortgagee is left deprived both of money and security, and perhaps saddled with a judgment obtained against him by the righteous (?) company on his collateral bonds.

This is no exaggerated account of a course constantly adopted by the class of life insurance companies of which we have been speaking, and one which has been of so frequent recurrence as almost to justify the suspicion that the result had been always contemplated, and the money loaned on a security barely sufficient to protect the first mortgagee, with a view to induce other parties to advance the second loan and thus put money into the pockets of some favorite of the company. This suspicion is too often confirmed by the fact that similar loans will be made on whole rows of houses owned by the same parties, all or most of which will, by a similar process of manipulation, eventually pass into the hands of the company. Persons venturing on investments of this nature will do well to remember these hints.

The proceedings to which we have thus far alluded are generally conducted by a class of corporations of the degree of whose conscientious-

ness we have in previous numbers plainly expressed our opinion; and, for the ill odor into which they have brought the whole name of life insurance, the better class of companies whom we have mentioned are entitled to the sympathy of the public.

But there is another practice to which many companies of a different character* have more or less lent themselves, which has also had its influence in creating the existing prejudice against them. We allude to the freedom allowed canvassers, who feel at liberty to resort to every device, artifice, and trick, which human ingenuity can compass, to induce parties to insure in the companies which they represent. A favorite device with these persons is to represent life insurance as an investment, in which, by ingenious calculations, which are generally unintelligible to the victim, he is made to believe that, by the expenditure of a small sum annually, he would eventually derive large pecuniary returns from the interest offered him in the profits of the concern. How this is to be effected the insured does not understand; but, regarding such a result as certain, he naturally becomes dissatisfied as years roll on, and he receives none of the magnificent returns promised. This dissatisfaction finds vent in the general conclusion "life insurance is a humbug." This opinion, caught up by many who have experienced similar disappointments, is strengthened by the discreditable facts which from time to time appear about one company or another; and a feeling of general, though unreasonable, disgust arises, not only against the particular company in which the disappointed policy-holder may be interested, but against the entire system of life insurance.

One of the principal events in the history of life insurance, during the latter part of the year, has been the proposition to establish a form of life policy for the adoption of all companies belonging to the Chamber of Life Insurance. It remains to be seen whether this will be adopted, but in the mean time it may be as well for our readers to be apprised of one provision which it is proposed to contain, and draw their own conclusions therefrom.

"If any premium upon this policy shall be unpaid when due, in every such case this policy shall be void, and the consideration of this contract shall be deemed to have failed."

In other words, whenever a party insured is unable to meet a single payment, he is immediately to forfeit every thing that he has previously paid! This little proviso is ingeniously inserted in the heart of the paragraph in such a manner that, ten to one, it will be overlooked by four-fifths of the individuals insured at the time that they take out their policies.

This proposed new form of life policy has sundry other agreeable

* Not all, however. We shall hereafter have occasion to enumerate several companies who have proved honorable exceptions to this rule of practice.

features. It requires all premiums to be paid at the head office of the company, instead of, as at present, at some office at a given place, or to the company's authorized agents. Travel beyond certain limits, to be prescribed in the policy, is also to be a ground of forfeiture ; and the various restrictions on parties insured are to be made more stringent than ever.

The vexed question, whether or not the non-payment of premiums caused by war forfeits the life-insurance contract, has received an affirmative decision in the Supreme Court of the State of Connecticut, in the case of Maria Worthington against the Charter Oak Life. This was the case of a Southern *non-combatant* who had paid his premiums regularly until communication between the North and South was rendered impossible by the war, and had tendered his back premiums at the close of the war, which the company had refused to receive. The Supreme Court of Connecticut has the distinction of being the only State Court which has adopted this harsh construction of the law. The Supreme Courts of Massachusetts, New Jersey, and other States, have invariably decided the question, when brought before them, in favor of the assured and against the companies. The United States courts have decided the question both ways; in New York sustaining The New York Life, and in Tennessee deciding in favor of the liability of the same corporation. Both cases were appealed to the Supreme Court of the United States, but, in the absence of a chief-justice, the court stood equally divided, so that the question now awaits the decision of Chief-Justice Waite at the coming term.

Whatever may be the ultimate decision of this question, the discreditable fact still remains that these companies, in order to evade the payment of their policies, avail themselves of the non-payment of premiums, rendered inevitable by death, and for which the parties insured were in no wise responsible. In the case of the Charter Oak, this course was rendered peculiarly discreditable by the fact that the decedent took no active part in the war, that he paid his premiums regularly as long as there was any one to receive them, and promptly tendered the whole arrears on the resumption of intercourse with the North. The ground taken by the company for refusing to pay the policy was that, forsooth, the party might have enabled himself to continue his payments by removing his domicile to a Northern State! Comment would be superfluous.

After dwelling so long on some of the most painful features of many of our insurance companies, it is pleasant to be able to turn to the record of those whose conduct we have been in the habit of commending as exemplary, in our former issues, and to see that they have, as a general rule, sustained their character. It is true that there are some companies, whom we had regarded for some time as possessing the higher qual-

ities, who have proved that they have at least some qualities which are very low, but we have never pretended to infallibility; and, when we have found those of whom we have spoken favorably degenerate, seldom as it has happened, we have not hesitated to set forth the fact in plain language.

Some years ago, it may be remembered, we had occasion to animadvert with some severity on the course of the North America Life. The assurances of friends led us to alter our opinion; and we have since continued to think and speak favorably of that company. We regret that an event should have recently occurred which might seem at first sight to call for a renewal of former strictures. We allude to the fact that on the 24th ultimo the president and his associates retired from the management, and Messrs. Furber, Bewley, and Montague, all officers of the Universal Life, were elected respectively to the offices of president, vice-president, and secretary, which, coupled with the transfer of the offices of the latter company to the building occupied by the former, would seem to indicate a virtual amalgamation of the companies. Whatever crisis in the affairs of the North America may have determined this step, we readily acquit its officers of dishonorable intentions; moreover, we hope that it is one which the policy-holders will have no occasion to regret.

At the close of the year we generally abstain from mentioning either the bad or the indifferent companies, in order to afford them an opportunity of improving at the beginning of next year, if so disposed, without having to surmount any recent prejudice. And as seldom do we do more than mention the good companies at the same season.

It is particularly needless that we should now, having performed in our last number the agreeable duty of showing fully how comparatively slight was the effect of the great panic on the latter institutions. Few of our readers will need to be reminded that those which thus distinguished themselves were the New England Life, Manhattan Life, Knickerbocker Life, Phœnix Life, Continential Life, United States Life, Provident Life and Trust, American Life, and Mutual Benefit Life.

All we need say now is that there is not one of these companies, whether its home office be in New York, Boston, Philadelphia, or Hartford, which, so far as we are informed, does not close 1874 in a prosperous, sound condition. Indeed, we have in our hands ample proof that four-fifths of those mentioned never did more honor to themselves—never illustrated the value and real beneficence of life insurance more nobly—than during the present year. But we await the official reports. These we shall have in time for our March number, and we shall not fail to show from them that our estimate is correct with scarcely an exception. Should an exception present itself, however, we shall not fail to note the fact, although we shall do so only with

regret—not regret that we have made a mistake, for we have never pretended to be infallible, but regret that those who have so long been doing good should lose the ability to do so in the future, or regret that virtue should degenerate into vice.

We are quite willing to believe that the manager of the Equitable Life has been retracing his steps in some important respects since his promotion to the presidency of that company. We need hardly say that what we mean by this is that the gentleman alluded to pursued an exemplary course for many years as an underwriter; but was induced, in an evil moment, some two years ago, to permit himself to be unduly influenced by men like Winston, Batterson, Beers, etc.

It was undoubtedly Mr. Hyde who built up the Equitable. Without any reflection on Mr. Alexander, now deceased, and who was unquestionably an honest and honorable underwriter, the master spirit of the company has always been Mr. Hyde. If that gentleman has made a mistake, and injured the prestige of the Equitable by adopting certain Winston plans, does it follow that he should continue, now that he is President, to follow an example worse than doubtful.

In taking leave of the life insurance companies, we earnestly recommend a principle, already observed by many of the best, which, in general, would go far to rehabilitate the system in popular confidence. Be careful in the selection of agents. Employ men who will bring to the company such business only as can be retained. Require them to see that the person insured understands exactly the nature of the contract into which he enters. Let him be instructed in his rights, and informed as to his duties; and let the agent hold out no promise or inducement which the future may not be reasonably expected to realize; above all, let them never represent life insurance as "a profitable investment," or, in fact, as an investment at all. By this course, an agent may not bring in so large an amount of business to his company; but the business, when brought in, will remain. There will be fewer disappointments, and less heart-burning—and a reputation may be established which, as we have again and again shown, shall withstand all the assaults of enemies, and the still more deadly blight of the ill-fame of less scrupulous and worthy companies.

Our readers will remember that in former years we were in the regular habit of criticising the Fire as well as the Life Insurance Companies, and pointing out the hollowness of the pretensions of many of them; we called attention to the greatly amplified assets which they were in the habit of returning under the general denomination of "cash in hand," "money in bank," and such vague statements, which it was equally difficult to verify or disprove; and we often saw that many of them would only want the excuse of a small conflagration to go into bankruptcy, and thus evade the payment of claims which they were

either unable or unwilling to meet. It was in this way, and from data of their own furnishing, that we predicted the failure of the International, the Security,* and several others. Well, the event, so long foreseen, in due time arrived. The Chicago fire of 1871 extinguished some of the seemingly properous companies, and gave others the excuse for which they had only been waiting, to go into bankruptcy, with the money of the policy-holders—from which they had been for years deriving a comfortable annuity—in their pockets. Some companies, which we could name, contrived deftly to *exploiter* both fires. They went to pieces with the first news of the Chicago disaster. Sympathy was at once expressed for the unfortunate directors, but of the more unfortunate policy-holders not a thought was had. The friends of the directors came together, and the companies were started anew, with perhaps slightly-altered titles, but the same organization, the same directors, and (unfortunately for themselves) many of the same policy-holders. About a year later, a fire occurred in Boston—and at once these companies again threw up the sponge—there were fresh receivers, fresh marshalling of assets, and the same lamentable deficiency of funds for the payment of debts, that had been witnessed but a short time previously.

These conflagrations are the only opportunities which are generally afforded of testing the reliability, or unreliability, of fire companies. In the case of a life company, every policy must in the nature of things one day become due. The question of the company's ability or willingness to pay is thus constantly presented; and any company, who makes it a principle to evade or resist the payment of just claims, is sure to have its character pretty well ascertained before many years have expired. With fire insurance companies the case is entirely different. Of the numerous houses, and other buildings on which they issue policies, whence they are in the receipt of a regular and handsome annuity in the shape of premiums, the presumption is that not one in three thousand burns down in ordinary times. Consequently, the losses of any one company are comparatively rare, and occur at sufficiently long intervals to allow it to contest the payment as often and as unreasonably as it pleases, without calling much attention to the fact, or affecting its general reputation. But let a fire of any extent occur, and up goes the company like a sky-rocket, and the losers may whistle for their money; or, if the company determines to face the music, why the community will before long learn that no life company or other institution will show more ingenuity and determination in contesting and evading the payment of the policies on which it has so long been pocketing the premiums.

* Before the Chicago fire, we had prophesied that a small conflagration would suffice to wipe out the Security, whose assets, on its own showing, appeared to be a sum barely sufficient to insure one policy-holder.

When the Boston fire, following rapidly on the heels of the Chicago conflagration, brought about the result that we had so long predicted, we resolved to refrain from further criticism of the fire companies, until such time as the test of solvency and reliability which was then applied to them should have had fair time to operate, and it should appear what companies were in a condition, after a payment of their just debts, to carry on their business—which would burst like a spent bubble, and perhaps, after wiping out their debts with a sponge, start the business afresh under some flimsy disguise—and which would choose the course of contesting most of their losses and letting the result of these contests decide whether they should continue or collapse. The approach of the time when we may look for the usual report of these various companies suggests that now is the proper occasion to examine what they have done, and to furnish some light by which these coming reports may be examined and the reliability of their statements tested.

At the time the report of the former year's proceedings was published in February last, we were struck with the absurdity of many of its statements, and with the fact which appeared too clearly that, of the assets returned, many were utterly worthless, consisting in numerous instances of the stock of other companies and other private corporations, loans on stock collaterals, and cash on hand or deposits in banks for the amount of which we had to take the company's word. We speak of this at present only to put the public on their guard against any similar process of manufacturing assets which may appear in the forthcoming report, and to indicate how, while confining ourselves now to general remarks, we may be in a position in future to place our finger at once on the diseased spot, and put the proposed returns of the individual companies to the test of truth.

For example, one company last year returned a surplus of $497,456.32, of which $214,150.00 was in loans on the sort of collateral stock above mentioned, and $199,595.00 invested in stock of the same, or a like nature; $37,493.73 more was in the shape of debts owing; leaving, on its own showing, only $46,317.63 for real substantial investments. Another, whose surplus, according to its own account, was only $20,349.33, had $117,166.50 loaned on stock collateral—principally railroad and insurance—and an investment in Tennessee State bonds, very considerably below par. Of its assets, $7,593.44 was cash in hand, and $20,908.38 money on deposit in the bank, $23,478.00 money due. No wonder that its expenditures exceeded its income by $16,971.13. A third, which had indulged its *penchant* for loaning on stock collaterals to the extent of $76,495.00, found itself with a balance sheet of $175,505.63 income to meet $225,599.74 expenditures.* A fourth, which had

* In this case, the whole income received on the stock collaterals was $3,637.10—something under five per cent.

$36,500.00 out in this class of loan, and $20,000.00 invested in bonds, not of the United States, expended $15,855.92 in excess of its income. A still more disastrous instance was that of a company which invested $41,840.00, in town, county, and village bonds, and loaned $217,901.29 on stock collaterals, principally the stock of one insurance company. The result was that the company found its capital impaired to the extent of $88,565.45.

Our readers will learn from these facts how to estimate companies whose returns show loans on, or investments in, the stock of other insurance companies. Of what use is it that companies are prohibited by statute from holding their own stock, if they are to evade the prohibition by the simple process of exchange? Let a conflagration occur, and it will soon appear whether the policy-holder's security is any better because the company's funds are invested in the stock of another company instead of its own, when both are going up in the same explosion.*

Another remarkable fact which appeared in the last report, and will no doubt be repeated in that which is forthcoming, is the disproportion of the receipts and expenditures of many of the companies. This fact suggests some questions which may well puzzle the uninitiated. By what sort of manipulation did a company whose expenditures at the close of the year 1873 had exceeded its receipts by $72,658.08 contrive to declare a dividend in January, 1874? One is inclined to wonder where the money came from. Why, again, should a company, whose receipts exceeded its payments for losses by $18,577.91, have yet, on its own showing, expended beyond its income the sum of $29,822.46? Do the $30,000.00 paid out in dividends, and the $15,183.32 for salaries, tend to account for this? How did another company which had received for premiums alone $784,046.53, and paid out for losses only $534,863.87, contrive to spend $48,368.12 in excess of its receipts? How did it pay $50,000.00 in dividends, $115,906.69 for brokerage, and $69,077.29 for salaries? How much have the payments to stockholders and officials to do with this excess? These statements are, of course, not new—in fact, they are old enough to have been generally forgotten; and for that reason we revive them to show the companies that they have not been overlooked. We have in this article refrained from mentioning the names of the companies to whom we have alluded; but we propose to take up the next report immediately on its appearance, and shall then as in the past give, without hesitation, the names of those whose returns shall furnish a proper subject for criticism.

We are anxious, moreover, to see whether, in the report of the different companies for 1874, the same large proportion of assets will be returned as "Cash in principal office," "Cash deposited in banks," "Interest due and accrued," "premiums in course of collection," etc. This class of assets are, to say the least, very scaly. Items of this sort, which the public has no means of verifying, are as easily put down at a large as a small figure—and it is too convenient a mode of swelling up an unsatisfactory balance-sheet for the benefit of the uninitiated not to be open to the gravest suspicions; particularly as we can think of no reason why companies who really own these large sums should not keep them properly invested instead of leaving them on deposit at a very small interest, or, perhaps, no interest at all.

The enormous assets returned by the various Hartford companies have long been a laughing-stock. Here, for example, is a company who claimed last year to have assets to the amount of $5,845,802.03;

* We shall have occasion, hereafter, to mention an instance in point.

but of this sum only $405,000.00 was represented by real estate, and $91,311.00 by loans on bond and mortgage. The rest was all stocks, bonds, loans on collateral, and money due, or cash on hand, or on deposit—all items for which the company's word had to be taken, and which might or might not be as stated in the report. It is surprising how closely the expenses of this self-styled enormously rich company shared its receipts. Here is another which pretended to have assets amounting to $705,254.00, every penny of which was invested in fancy stocks, except $130,500.00, which was represented as "cash on hand." Who is to estimate the real value of this class of assets? A third, which calls it *available* (!) assets $2,415,681.51, has $1,046,683.61—an amount exceeding its paid-up capital—represented by the same kind of fancy stock, $171,662.65, "cash items," and $372,918,05, money alleged to be due! What margin remains for real, tangible, unquestionable property? We would advise these companies to be a little less eager to inflate their assets, and to confine themselves more strictly to their genuine and tangible investments, or we may deem it necessary to prick the bubble.

The real value of many of these nominal assets appeared very distinctly in the returns of the receivers of such companies as went into bankruptcy. Of the New York Ætna, for instance, whose liabilities—including $6,000.00 attorney's fees—amounted to $631,551.77, the assets were only $31,501.53, of which $3,763.00 were admitted to be bad or doubtful, and $7,200.00 consisted of stock in the Washington, which itself became insolvent! The balance, except $163.00, representing "all other property," was described as "cash in bank." The Washington itself showed only $48,439.71 assets, to meet $495,407.55 liabilities—so we may infer what the security of the Ætna is worth. The Astor showed $52,905.18 assets, against $177,790.00 liabilities. The Humboldt had in the hands of the receiver about $113,476.93, while its liabilities stood at $154,840.09; of which the referee's, receiver's, and counsel's fees and expenses were estimated at $18,000.00. The reciever of the Harmony realized $6,800.00 from bonds and mortgages, and $6,315.00 from loans—when the amount *realized* from this insecure mode of investment so nearly equalled the amount of the bonds and mortgages, what must have been the amount lost? The International had invested money in Alabama State bonds which were worth, on the market only $5,280.00, while their par value was $12,000.00. No wonder that the available assets of this company fell short of its liabilities nearly $30,000.00. The Manhattan had assets of the *estimated* value of $7,000.00, to set off against liabilities of $93,781.08. The Market returns showed some very curious investments, or at least securities taken as collateral for loans. Central Park N. & E. River Railroad bonds; Mechanics' and Traders' Bank stock; Firemen's Fund Insurance stock; U. S. Match Company stock; Mystic River Hardware Company stock! all securities whose market value was more than 50 per cent. below par. The Yonkers and New York showed $33,915.33 assets against $373,276.21 liabilities. We can imagine the feelings of the credulous policy-holders who had for years been paying regular annuities to these companies and their directors, when they saw their prospects of payment growing "fine by degrees and beautifully less." Yet, as if the gullibility of mortals were to be without limit, we now see many of these extinct companies virtually doing business anew, under a name perhaps slightly altered, having for president the receiver of the defunct company, doing business in the same offices—with the same nominal paid-up capital!

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ART. I.—1. *Historia Critica Philosophiæ* (*Critical History of Philosophy*). BRUCKERT.

2. *Manuel de l'Histoire de la Philosophie*, de M. TENNEMANN, traduit de l'allemand par V. COUSIN.

3. *Histoire de l'Université de Paris.* Par M. CREVIER.

4. *Histoire Comparée des Systèmes de Philosophie, etc.*

IT seems remarkable that, amid the diversity, now quite large, of what are styled philosophies or theories of history—that is, of principles imagined to account generically for its main course—it seems remarkable, we say, that the most obvious of them all should have hitherto been overlooked. The oversight, however, would be quite consistent with the course of knowledge; with the way in which it is acquired in its progressive stages. The more difficult or complex the subject or the solution, the later, of necessity, can it be mastered by mature science. The truth may earlier be felt implicitly, or be conjectured by speculation; but it is only when enforced by demonstration that it becomes science. Those earlier stages are respectively but personal or popular sentiment, or, in the case of speculative notions, a mere opinion. The former knows through sense and substance that the thing has been so through

the past; opinion knows by signs or forms that it is so for the present. But the knowledge of the essence, which is what we term science, can alone answer for the future, and through it fully for the past and present. For it must needs come to corroborate its own postulates and principles.

Thus, at all times and with even savages, the present theory of the solar system must needs have been implied in some one or other of their common sentiments; as the succession of day and night, the main direction of the sun's course, and even the worship of this luminary in quality of deity—that is, as source of life and light and goodness to the earth. The ancient Pythagoreans went further and gave this sentiment a form, by conjecturing that the effects, instead of divine attributes or emanations, were caused by the earth's rotation and its revolution round the sun instead of the reverse as was the sentiment of the savages. But the philosophers, too, could prove it but by a shibboleth of their own sect, which, although it might respond to the facts then before them, went to pieces before changes presupposed by them, both past and future.

It was this latter view, accordingly, that Copernicus at last came, not to feel himself, nor to opine with some others, but to prove to all mankind who had the requisite intelligence, and by the evidence called demonstration, of which the object is science. It should be noted, however, that, even in astronomy, although the most advanced because the simplest of the sciences, the demonstration is still imperfect in even its Newtonian stage. The notion called attraction of the planets and other bodies, and of their original distribution throughout space by the deity, is, as this agency indeed confesses, a knowledge still of mere opinion. It accounts statically for the present, but leaves the history at loose ends.

In the knowledge of the social system, also, as of the solar, although infinitely the more complex, the march must be the same at bottom. There was never a tribe, perhaps, or other portion of mankind whether civilized or savage, who had not the persuasion that the annals of themselves and of the fellowmen they had to do with proceeded from the special valor or

other gifts of the rival tribes, or from deities who favored them, which meant the same by reflexion. Ages later, when historians came to treat in form of such events, they spoke expressly of the causative force or faculties of certain peoples, as of the Jews, the Greeks, the Romans, and in our own day, the Anglo-Saxons. Each of these were, for the time, represented as destined to rule mankind. But, according as the relative future brought them severally to decay, the ætiology of race was abandoned as a mere opinion.

A cognate cause of this effect was, that the theory was applied usually but to the race of the theorist himself and when a ruling one, and took no notice of the races ruled, as this condition seems to need no faculty. So the partial and purblind notion was cast aside with the day. It was only when all the races throughout all times and all vicissitudes of weakness or strength, of ignominy or glory, of virtue or corruption, could be viewed as moved by one great law, that the moving cause could take the scientific character implied by race. Thus, all the plants of the wilderness must have been known throughout all ages in their uniformities of growth and of form and of propagation. But it was only with the idea of the law of their development that we can master any thorough comprehension of the chaos. Now such a chaos, such a wilderness, continues still to be all social history, with the enormous aggravations of immensity and abstraction. For it stretches through all times and regions, and remains visible but through the intellect.

That human races form the organs, the mechanism of this social history seems thus a position which all admit by implication or express opinion, and which awaits the recognition of integral theory from demonstration. But the present small occasion is no time or place for such a task. So we propose but a specimen of the enterprise, a monogram, by way of inciting other wills of less inadequate scope and leisure. For this end, take a transverse section, or *cut*, of the social system at its point of utmost European unity and intensity, and which must needs disclose the grain of its specific texture

through all time. Such an epoch in Europe is confessedly the middle-ages, when under the grand unity which took accordingly the name of Christendom—thus imaging the unity of a family or house, *domus*—and the intensity or elevation of the social development will be determined by the philosophy known as the Scholastic System. So that a theory of general history will thus have been contracted to the most compendious scale both of precision and perfection.

But, as is familiar to many readers, the philosophy called the Scholastic is distinguished from all others, perhaps known to speculative history, by the regular mechanism which pervades its entire composition. Throughout its whole course of some five or six centuries, it consisted in the contention of three rival sects, who rose progressively with its development, and retroceded from its culmination—the former march being thus a free philosophy, and the other properly a close system. In the ancient Greek philosophy there were indeed three like compartments, known in order as the Pythagoric, the Eliatic, and the Socratic, and this last again was subpartitioned into Platonists, Aristotelians, and Stoics. But there was a deep difference admitted by the very language. The Greek divisions were all viewed as independent schemes of doctrine, and therefore were styled "schools," and denominated from the personal founder—all except the last, or Stoics, who took this title from their *place* of teaching. The several forms of Scholasticism had a compact reference to one another, were described as "sects" or *sections* of a single sphere of doctrine, and took their name, not from the authors, who remained unknown, but from the subject essences. It is a further proof of the advance of this philosophy upon the ancient.

These three sects of the Scholastic System are famous through the Christian world, by the names of Realists, Nominalists, and Conceptualists, in this succession. And the reason of this order is the law itself of all progression, which must proceed first upon the things themselves, then on their names as the noting contraries, and at last compass, by oscillations from these two extremities, the solid essence. For

the extremes can show the thing but in the mere surface or the mere section, from both of which we come by infinite adjustments to *conceive* the essence.

Now the present and practical thesis is, that those three sects of Scholasticism have, as a point of fact, as well as a direction from the foregoing principles, represented the three contemporary civilizing races, and which were in order, the Roman, the Gothic, and the Celtic. And surely the results should be of rare moment on their own account, and apart from all extension to a science or theory of social history. But first it will be proper to delineate the three doctrines, that we may know precisely how to identify them with the races.

Those three appellatives of Realist, Nominalist, and Conceptualist are taken quite literally from contrasted grounds of human knowledge, and of course by men conformed intellectually to these differences. With the foremost class of Realists, as the name itself declares, the knowledge lay in the bare perception of what several objects present all in common, and which was thus regarded as something distinct from their points of difference. It seemed to possess a more stable and thus independent unity, either *in* or *anterior* or *posterior* to the central subject. These variations of *in re*, *ante rem*, *post rem*, which formed in their day so many subjects or shadings, were, however, but the mere historical development of the main notion, to meet the exigencies of attack upon the manner of the common nexus. This general substratum was alone deemed *real*—or *flowed* through time without cessation, in the manner of all matter—and thence the name of Realism. It is primitively from the Greek verb ῥέω, to flow.

The existence of this substratum the class called Nominalists quite denied. With them all knowledge and even reality were not alone founded on, but also strictly bounded or confined to, the bare particulars; besides which they could see nothing throughout nature except words or names—thence the potency of words or names with them to change the nature or

the powers of things. The name, as it applied, in its quality of mere sign alike, to all the different individuals of the class—being itself an emanation from an individual person—appeared in this way to represent the objects jointly, and thus generalize them. But it was only through the subjective medium of man or his personality, as, on the other side, the Realists had generalized them through a physical substratum. In this the result seemed indeed more stable, as a thing of sense and objectivity; whereas the names appeared to lie at the discretion of the personal utterer.

So, then, all positive and real nature would be a chaos of mere particulars. "The Nominalists (defines Leibnitz, who was himself of the sect) are those who hold that all things beyond individual substances are but mere names—*qui omnia putant esse nuda nomina, præter substantios singulares.* The reality of abstract ideas and of essences they reject utterly." These universals both of substance and essence they called entities; and which were not to be multiplied, said Occam, beyond necessity—men being thus left each the judge of his own needs to admit or create them! Thus this celebrated summary of the wisdom of the sect was a maxim less unfit for the economy of a kitchen than for the organization of a system of philosophy.

Now, these two doctrines were in principle, as they are known to have been in history, directly in the teeth, so to speak, of one another. What the one side asserted, the other denied. Wherefore, as having nothing to proceed upon in common, they could only affirm and deny without proving, and so were kept to an air-beating oscillation for ages. Whence the Nominalists, too, had, like the Realists, various subjects, through the means of which the two parties had often graded toward each other. Accordingly, upon this ground of mutual convergence, there gradually arose between them a third and the supreme doctrine, which came to comprehend through them that things in their contexture consist neither in abstract substances nor yet in verbal signs, but in something which controls the energies or operations of their

proper nature. This compound view, which was acceptable by reason alone—not by reflexion like the general names, nor by sensation like the common substances—was the grand realm of *relation* which combines the extreme surveys, and which gave the thinkers who came to compass it the appellation of Conceptualists.

But what, then, was comparatively the importance of these several surveys, and the occasion of the conflicts which kept them quarrelling for those long centuries?

The importance was in all of them the latitude of human knowledge. The criterion of this knowledge was by the first placed in the senses, with the faculty of imagination as the medium of embodiment; by the second, in the sentiments or rather the reflexion with its reaction through volition, in the shape of names or language; by the third, in the contexture of rational relations, thus evolved between the counter impressions of sense and sentiment. The main foundation in the foremost survey was external and physical nature. In the next it was the internal or moral nature of man himself. In the last, it reached the intermediate, complex, and solid nature which has its organ in the social system, and its operation in time or history—not in space nor in mere matter, like the two anterior views respectively. And the cause of these contentions, which continue even to this day to disorder the very sciences, was the monstrous absurdity of each of the schemes pretending to be the whole and exclusive truth; whereas this goal could even possibly have been attained but in the third system, and through the serial preparation and concurrence of the two preceding. Thus they would each pass its own fraction of a third part for the whole process, besides the still more grotesque oversight of all series and its progression.

But how were processes so vital to the being or progress of society to be maintained amid their warring movements, in this organical juxtaposition? Why, solely and simply by the organs known as races. The operations of the animal body are conducted with a like economy, by dispensation of special

functions to a diversity of organs, of which each attends, mechanically for the most part, but to its own, and yet all concur harmoniously in the main ends of the general system. They have, in fact, in physiology, been resolved to three general tissues, embracing all the other organs, great and small, of the whole system; and which tissues are called the cellular, the muscular, and nervous. And the analogues to these might be followed up into society.

For example, if we take the entire expanse of human history, its races may be set off loosely into three groups, or grades, corresponding respectively to the preceding principles. Thus, the primary or Asiatic group are theosophic, pantheistic, or hold in some or other rudimental way to Realism. The African group, which in the scheme of civilization comprised with the Egyptians, the Semites, and the Hellens, were on the contrary mythological, that is, verbal, Nominalistic. In fine, the European group came to inaugurate Conceptualism, though of course in the generic measure, and at first by institution. It is the import of the great spiritual system of Christianity.

So, to follow up the march from institution to philosophy, we must advance specifically into this supreme group of races which were to prosecute and to perfect upon the scale of Europe the general movement. They were, as stated, in order both of date and geography, the Roman or Italian, the Teutonic and the Celtic. We may now conceive the singular, though perhaps still unnoted, fact that the Realists, the Nominalists, and preeminently the Conceptualists, belonged respectively, so far as genuine in sect or blood, to these three races. A merely running verification can alone be here possible, selecting as test cases the most popularly famous.

The generalizing and concrete Romans, already Realist in their heathenism, and who never came to separate the Christian essences from the crude substances, re-established the Realism as the rule of their theology; as to this day with them the Italian unity is the sum and substance of their nationality. Not a step in organization has been made by the Italian king-

dom, but the several constituent peoples cling to their old institutions. The only exceptions might be finance, which, as a matter of simple quantity, is reduced into a semblance of system even in England; and the exclusion of the papacy as spiritual power from their Realist regimen.

The Nominalist view was represented by the early heretics. They have accordingly all belonged to the African group of races; that is to say, Egyptian, or Semitic, or Greek, and who transmitted this part of protest to their western analogues the Teutons, in the latest and most fatal of those earlier errors which was Arianism. For this doctrine, in denying the divine essence of the Son, which was the import of his consubstantiality with the Father, did exactly as the Nominalists thought and acted toward the Realists. The Son, as different in name, must differ likewise in nature. The speculation thus far kept the received platform of theology, and to have strayed from it to metaphysics was precisely here the heresy. Indeed, the import of this word itself is, *hesitation at received opinion.*

But the procedure could attain philosophy in only the third stage, which would reconcile theology with free inquiry and personal conscience. This grand synthesis, vaguely outlined in the Asiatic group of races as by the Hindoo visionaries in their triune principle, and repeated at the corresponding close of the African with much less indistinctness in the triads of the Neoplatonists, must, with the Christian revelation of the great dogma of the Trinity, have been resumed upon this positive basis in the guise of a new philosophy—to be inducted by the similarly third in order of the western races. This synthesis was Conceptualism; the philosophy, Scholasticism; and the founder of both was John Scotus Erigena.

It must be evident that, in this body of philosophy, when it attained to system, if not rather to a sort of logic, the Celtic race would be the main occasion as well as agents of the controversies. For its mission of synthesis would incessantly conduct it to interfere by turns with the extreme surveys to be harmonized by it; resting upon Realism to coerce Nominalism, and upon Nominalism to inflex Realism.

The corresponding races who, from their oppositely concrete purviews, could comprehend the contest but on the footing of theology—that is, of orthodoxy on the one side and heresy on the other—would merely react against their common assailant, and so make no substantial contribution to the system. If we add to these precautions a final mark for the respective doctrines, the reader will have ample means for verifying our indications, and through them for determining the precise position of Erigena, or of his race, which will be thus illustrated both by anterior and posterior history. The marks are, then, that Realism places universality in *substances*, while Nominalism will allow it but in personal notions or their *names*, and Conceptualism recognizes it but in the rational essences, which are both notional and substantive, while independent both of mind and matter.

According to the foremost of these tests, the Roman race does not offer one writer really native and original—from Bœthius to Anselm, from St. Anselm to Acquinas, and from this doctor of the middle-ages to the late philosopher Geoberti —who was not in effect, if not profession also, a Realist. Only mongrels or imitators might appear to form exceptions. Thus Acquinas himself displayed some Nominalist leanings, from his servile adherence to Aristotelism; for the peripatetic school was the Greek prototype of this sect. On the other hand, St. Anselm, the classic type of Realism, sometimes pushes this impression to the verge of Nominalism; and this unconsciously or confusedly. For instance, in the celebrated contest with Roscellinus, he alludes to the persons of the Trinity in these terms:

"Qui mundum * * * comprehendet quo modo plures personæ, quarum singula quæque est perfectus Deus, sunt Deus unus."

Now it is plain that the word "plurality" applies as normally to two or four or any higher number as it would do to three, and so that the writer attached no value to this special limit. But it is also very certain that, as well in logic as in orthodoxy, the position can be tenable but of the number three alone. For the relations between three persons or sub-

stances compose an essence, a unity in diversity, an indivisible trinity, as do likewise in bodies simply physical the three dimensions. For length without breadth, or either without solidity are known to be but fictions of the mathematicians. The moral is, then, that Anselm viewed the Deity not as an essence but merely as a substance, in due conformity with Realism, and that he fell toward Nominalism in confounding trinity with mere plurality.

So the Teutons, down from their aggregate adoption of Arianism through the more conspicuous writers of all succeeding ages—from Rabanus Morus who was contemporary with Erigena and Gotchalk, a fellow Saxon who was the victim of his lash, along to Albertus Magnus, to William of Occam, to Luther, Locke, Leibnitz, and their followers—were all Nominalists. Opinions have been various as to certain of these cases; but the grounds of all such shiftings may be now reduced to rule; they will always be found in persons of mixed extraction or inferior calibre, who form the body of all sects, and take their sides from chance or interest. Even Albertus, for example, is sometimes classed as a Realist. But the appearance was a mere deference to his religious or Romish order, and which he colored by substantializing Aristotle's forms to the "second substances." Thus the tendency with him had been to merge the substance in the form; the Realism of his Roman creed in the Nominalism of his Gothic origin.

So, through a counter oscillation, Locke is sometimes called a Conceptualist. But he was merely prudent in his Nominalism, as in all things. He was cautioned by the natural consequences of the doctrine in Hobbes, who made virtue, vice, and truth, to be nothing but mere words. This strict consistency of Hobbes, Leibnitz described as *plus quam Nominalis*. "Not content," he adds, "with the rest of the Nominalists to reduce universals to names or words, Hobbes affirms that the truth itself of the things consists in the names, and what is more, depends upon the human will." Horne Tooke derives the name itself from mere opinion, or

what men *tro*, that is, opine or conjecture. Thus it was that Hobbes also made political and religious right to depend upon the absolute will of the personal sovereign, and all in due conformity with the Nominalist principle. But Locke was far too wise to run his tenets into this absurdity. He temporized or trimmed, as we saw Leibnitz do, and even Occam, and thereby verged to the middle ground, which the Scotch call their Conceptualism.

Moreover, in fact, Locke's Nominalist purity appears quite palpable. His "ideas" are no conceptions of essence or relation, but mere formations of the mind, and, as he calls them, "nominal essences"—a single phrase, whose incongruity avows the absurdity of the doctrine. Again, Locke says in terms: "It is plain that general and universal belong not to the real existence of things, but are the inventions and creatures of the understanding, *made by it for its own use, and concern only signs*, whether words or ideas."* Thus the ideas, with Locke, are also, like the words, but signs—not ascending to the dignity of conceptions; and due economy in the manufacture of both. And this is universally still the spirit of the race, with the practical reserve of what the English call their common sense. No doubt, a providential check upon their personal idiosyncracy.

In fine, the Conceptualism thus remains for the Celts. The mask established for this doctrine was to have the *essence* for its object; not the sign as with Nominalism nor the substance as with Realism. But this was just the so-called heresy of Berengarius of Tours, who was the first to declare himself a follower of Erigena. He placed the *real* presence of Christ in the sacrament, not with the Realists in the substance, as the morsel of wafer, nor with the Nominalists in the name given it, but effectually in the essence. "If you rave with Lafranc" (says he), "that the flesh and blood of Christ exist to sense (*sensaliter*) upon the altar, you evidently set a snare for yourself; for he who thus affirms

* Book iii., ch. 6.

their *sensible* presence, and denies at the same time that they can be seized by sense, must contend both against his own proposition and the conception of all who are not destitute of understanding." Here was also a sample of the tactic, as above explained, to be employed by the Conceptualist race against the extreme doctrines. The writer's own view of the eucharist is stated in the following terms:

"Panem et vinum altaris post consecrationem esse corpus et sanguis Christi, quantum ad spiritualitatem vel rem sacramentum."

The *rem* was very possibly a purposed ambiguity, as consorting with the orthodox and Realistic notion; but more likely it was inability to designate the essence—the Latin idiom could never even naturalize this abstract term; and Berenger was still amid its second barbarism. It is accordingly recorded that he used indiscriminately the expressions *res*, *substantia*, and *essentia;* or, as its English version, *thing*, is said of matters abstract as well as physical. If he could but have explained that his meaning was the essence, and that essence is (pre-eminently in the Deity) the true reality, there could have been no valid objection to this use of *rem*, as it would signify the end or operation of the sacrament. Virgil does not mean by the phrase *restituit rem*, that Fabius restored the Roman republic, but its end or essence. It is what Scotus does himself in speaking of the sacrament—*intellectualiter mente, non dente, comedimus*—we partake of it conceptually, or by mind, not by mouth. The Calvinists call it well enough the "symbolic presence."

So, again, with even Roscellinus, the so-called founder of the Nominalists, he was really a Conceptualist in the polemical disguise. It would be more correct to style him the subverter of Nominalism. A writer of the day describes him as *non auctor sed autor;* not the author or founder of the doctrine, but the augmentor, that is, really the aggravator, the reducer to absurdity. And this he reached confessedly in the famous *præter vocis flatus.*

In this misapplied synthesis of the Breton, Roscellinus, he became, of course, heretical, by the touchstone of the

Trinity. But he did so by applying, unconsciously perhaps, to the prevailing doctrine his own Conceptualist principle, which brings all theses to the test of consequence. He was forced, it is known, to declare the equally monstrous heresy of the existence of three "essences" in the Deity. But how compelled, if he were a Nominalist, since the persons would be then but names, and the heresy would devolve to the *præter vocis flatus?* Compelled, therefore, because the principle which he relied on was not names but essences. But, moreover, the materials of this subject in general, whether furnished by contemporary chroniclers or modern critics, must be largely unreliable, as uncontrolled by science or system.

So, again, with the Celtic adversary of Roscellinus, William de Champeaux, the likewise preposterously supposed "founder of Realism." For Realism had been flourishing in mere discussion for ages previously, and he only systematized it by the new doctrine of Conceptualism. It was accordingly in this application that he came in conflict with Roscellinus, through the medium of a third and common principle, the essence, and which he too had from Scotus, though he called it substance, with Rome herself. This is manifest from his habitual illustration of the "parts and whole," as being inseparable mutually, which is the property of an essence; whereas, the substance and its parts are indefinitely separable. Gold, for instance, is as really *gold* in the smallest particle as in a mountain; while every atom that is detached from the mass must leave it less in substance.

It is the same with the common pupil of those famous rivals, Abelard, who came to combat *both* his teachers from a riper view of the Celtic principle. Yet he, too, continues still in England to be ranked a Nominalist; and has, *per contra*, by his French countrymen been recently erected into, not merely a Conceptualist, but even the founder of that supreme survey. In this, however, they do him too much honor, as will soon appear. His general ability is also overrated. He owes his fame, perhaps, as much to his "calamities" as to his capacities; and above both and all to having a

"great nation behind him." He fell, in short, into an Arianism almost as gross as the Gothic; and which is, perhaps, what the English critics have taken for his Nominalism.

The next and greatest of the originative successors of Scotus was his compatriot and namesake, the famous Subtle Doctor. In his case the Conceptualism becomes palpable and even precise. Acquinas and the Realists persisted to the last in the Greek dualism of matter and form as the respective principles of generals and particulars. Albertus, as above intimated, went to transpose this succession. He taught, like a true Nominalist, that it was the matter which particularizes while the form is "substantial," whence the vulgar illusion about his being a Realist, and the confusion in several others of the two doctrines interchangeably. When extremes could thus be jumbled, how look for rectitude in their gradations!

The oscillations from both those sides were put an end to by Duns Scotus, who interposed his celebrated system of *Formalism* between the matter and the form, which he termed *Quiddity* and *Haccicty;* a nomenclature which is still laughed at by shoals of even the learned, whose stock of mind united has failed to fathom its shallowest depths. They have not yet come to distinguish the *Formalities* of Scotus from the *Forms* of Aristotle—*formalitates* from *formæ*. See how Bacon, like an ingrained Nominalist, in his quasi-new philosophy, insists (and properly enough), upon the value of the Forms, but never once alludes to the Formalities. Yet the things were as distinct and opposite as the great planes of space and time, as shown by *etas*, superadded to the one name to form the other. Scotus, too, was then more recent, and among his popular titles was that of Master of Formalities—*Magister Formalitatum;* as the Italian, Peter Lombard was styled *Magister Sententiarum;* and the doctors of Nominalism might be dubbed *Magistri Quodlibetarum*. For their favorite form of composition they called *Quodlibetæ;* as this "what-you-will" mode of writing is still the style of their newspaper literature. It was but normal, then, that even Bacon should take no notice of Scotus, and should ignore in speculation the plane of Time, which is Conceptualism.

The ensuing organ of the doctrine in progressive lineage was Descartes. We find a succinct sample in his famous *Cogito, ergo sum,* or demonstration of existence synthetically through conception; and in which he also manifestly was a follower of Erigena. In him, however, the succession may well have been unconscious, or only organical, unlike Bacon toward the other Scotus; but that it was a fact will be reduced to demonstration. And the occasion will supply a practically famous summary of the three doctrines.

The formula of Descartes alluded to related avowedly to the celebrated demonstration of the being of God, by Anselm; for Anselm was a Roman saint and an English bishop, whereas Scotus Erigena was far enough from being either. Anselm was also the type and champion of Realism. His quasi-demonstration was accordingly this: "God is the *greatest* of all things imaginable; but this notion of itself must imply *existence,* as any thing supposed to contain it would be greater. But this would be a contradiction. Therefore, God exists." What must be the condition of the science of logic and of its votaries, when such a jumble of assumptions could have travelled down to us as demonstration! The only point of any force in the doubtless pious reverie (for he tells us naively that he groped for it, through even his dreams), is the simple allusion to the line of contradiction; which, besides, could demonstrate but indirectly and negatively, or *ad absurdum.*

Decartes accordingly resumed the argument with large improvement or elaboration; but was as yet unable to maintain it against Gassendi. He needed the counter preparation of Nominalism to set against the Realism, and gauge his way up to Conceptualism. This was furnished soon after him by Kant, who refuted St. Anselm, like both a heretic and Nominalist, by pointing out that existence could be no accession, because no attribute; so that the conclusion was a begging of the question. This was true, although proved in the way of *obscurum per obscurius.* And, long before, Duns Scotus might have prompted the French philosopher.

In fact, Scotus and his followers maintained constantly

against the Thomists—that is to say, the followers of his great rival, Thomas Acquinas—the invariability of this celebrated argument of Anselm. He notably advanced it by both a statement more concise, and a shifting of its basis from concrete quantity to *conception*. "God," said he, "is that which, thought or *conceived without contradiction*, nothing more or greater can be conceived without contradiction."* The form *cogito* is worth noting as repeated by Descartes, and as descriptive (*con-agitare*) of the process of Conceptualism. As to the argument, it is perhaps a sort of contradiction to think or to conceive of any thing devoid of existence, since nothing can be thought on without existing at least in thought. This, at all events, would be a Nominalist refutation of Anselm. Scotus elsewhere elevates the refutation to positive principle. "No *quantity* can be augmented with relation to an essence, for the essences of things consist in indivisibility."

Accordingly, what the Italian, Anselm, had in mind was, not at all the essence of the Deity, but the mere substance. A simpler refutation might, therefore, be as follows: "Existence, as anterior to all things, can prove nothing, but may itself be proved by all that follows from or rests upon it." Thus, in logic, as we know, the genus is wholly impotent to prove its species, while the species, on the contrary, and even the difference, evince the genus. But existence is the most general, and so most impotent, of even genera. Accordingly, it must be assumed, until demonstrated by its consequents, or, rather, its constituents—that is, *defined*—not at all demonstrated. Anselm and all his echoes spoke *de lana caprina*. Thence the test of contradiction introduced by Duns Scotus. Thence the argument of Descartes, whether improved or original, to demonstrate his own existence, the famous *Cogito, ergo sum*, and which concludes back from the intellect to bare existence, not inversely. The latter was the course of Anselm, who proved existence by existence.

* "Deus est, quo cogitato sine contradictione, magis cogitari non potest sine contradictione."

Now the famous reformation of this famous argument by Descartes is that which was presented in advance of both himself and Anselm, and in far higher perfection by Scotus Erigena. We cannot, on this merely incidental occasion, delay to note the singular profundities of the argument, and so will only append the text for the more studious of our readers.* For the multitude it will be best to add the comment of a French savant, who generously strips his own Descartes of this his proudest trophy:

"Si donc il est glorieux d'avoir, au début de l'étude philosophique, découvert et parfaitement developpé la démonstration de l'existence par la pensée, cette gloire appartient à Jean Scot-Erigène."—M. Haureau. *Histoire de la Scholastique*, tom. i., p. 138.

Moreover, Scotus has again the argument of Anselm almost in terms; only not as "demonstration," but correctly as definition—two processes as opposite to one another as the poles. *Deus est, quâ est qui plusquam esse, est.* Thus much for Scotus Erigena's opposition to Realism, and his title to be ranked the veritable founder of Conceptualism.

And yet Erigena is to this day accounted a rank Realist, a Platonist, an Alexandrian! Even the writer just cited is infected with these puerile prejudices; and the veil, though here and there removed by means of his own researches, is constantly relapsing, and never lets him see the full daylight. In

* Nulla natura, sive rationalis est sive intellectualis, quæ ignorat *se esse*, quanquam nesciat quid sit. Dum ergo dico intelligo me esse, nonne in hoc uno verbo—quod est *intelligo*—tria significo à se seperabilia? Nam et me *esse*, et *posse* intelligere me esse, et *intelligere* demonstro. * * * Non enim intelligerem si non essem; neque si virtute intelligentiæ carerem; nec ulla virtus in me sitet; sed in operationem intelligendi prorumpeti. (*De Div. Nat.*, lib. i., ch. 48.) Thus the supreme gradation expands into an *operation*, and so the light that demonstrates the mystic premises of Being and Power, as could be aptly shown in Scotus's own conception of the Holy Trinity. The Father was *existence*, the Son was *power* or causality, the Holy Spirit was *operation*, teleology, rationality. In passing off from either of the extreme Persons (or other premises) to supplement the other, and form the equipoise which is called *essence*, it breaks into the electric flame, which also is called Evidence.

order, then, to condense, let us select M. Haureau's criticism. He is the latest set writer on the Scholastic system, and for these writings obtained the prize, and thus the sanction, of the French Academy. In erudition he takes rank among the foremost of that learned body. And for Scotus and his countrymen he has a rather rare esteem. He is, then, for all these reasons, the strongest sample of an upright adversary. And, in truth, we know of few others of the writers on the subject who would, even when unprejudiced, deserve at this day a serious notice.

M. Haureau began to write with the popular notion about Scotus, that he was "a wild Realist, a mystic, an Alexandrian," and it was only from "curiosity" that he bethought him of examining. He looked into his writings, then, to observe if "this man was but a vulgar enthusiast."—*Un enthousiaste vulgaire.* Far otherwise, he proceeds, has our curiosity been stimulated when, on opening the treatise on the Division of *Natures* (he renders the latter of these terms thus correctly), we saw the author disserting, with the most magistral assurance, on the problems whose profundity inspired Porphyry with dismay, combating the Aristotelian solutions of Bœthius, and at the outset of that controversy, which was destined to agitate the scholastic world through the course of the middle-ages, compromise the Realistic doctrine by exhausting the system. But this itself should have suggested that Scotus passed to something higher. Then he equally "pronounces the last word" of Nominalism. For example, a contemporary speaks of Roscellinus as a follower of the philosopher (*sophista*) named John (Scotus), *qui eandem artem sophisticam vocalem esse deseruit.* Philosophy was then called sophistry by the adherents of the church, and the Nominalist form of it had not yet received a fixed title. No doubt Erigena did appear to the rude vision of his day to espouse this vocabular sophistry, as he also did the Realistic. Nor could they ask themselves if it were possible for the same mind to pass to contraries without traversing, in conception at least, the intermediate space. But it was that

the "last word" with him, in both of those extreme surveys, must be, too, the *first* in that which was to surmount and combine them. A common mason, to spring the arch, must proceed alternately from both abutments.

Of this, however, M. Haureau appears to have seen nothing; so he proceeds to convict Scotus of Realism. Not finding colorable means in either his language or teachings, he takes the course of representing him a foe to logic and to Nominalism—things united as well in science as in politics and religion, in the opinions of what may be styled the Orleanist class of French *savants*. Occam and other Nominalists wrote what were called logics, but they were merely dialectics, or, on the part of bare discussion, the use, in short, of names or language, as in Hobbe's Ready Reckoning. "Logica, sive *Computatio*" is the *naïve* title of this philosopher, and his "Logic" is a type or model of the Nominalist species. This sect, however, as it got also in, saw the title of "sophistical" was credited for logic by the ignorance of the times, and especially in contrast with its heavy rivals of Realism. The logic proper, or pre-eminent of *method* or co-ordination, could, of course, come into view but with the fullness of Conceptualism. It is that of which the French assign the origin to their Descartes.

But yet the class of Frenchmen, to whom M. Haureau holds in doctrine, keep repeating at the same time this tradition of the middle-ages, with respect to an alliance between logic and Nominalism. Both these things (says M. Haureau) are so revolting to Scotus:

"Tellement révolte Jean Scot, qu' il retranche du nombre des sciences celle qui traite de la methode et des formes du langage—la DIALECTIQUE et la rhétorique."

Here we see the dialectic is made convertible with general method, which is quite as if the minor premise should be taken for the whole syllogism. Accordingly, the principal treatise of this Scotus, and which proves him the founder of Conceptualism, is less a philosophy, as before observed, than it is a method. Nothing would be easier than to prove this

position in form. The very title of the work—*De Divisione Naturæ*—and which was given to it by modern ignorance for want of seeing its correct object, meant the division of all things into their *natures* or species. So he wrote himself in Greek περι φυσεων μερισμον; the Realistic Latin idiom not admitting the form "Natures." Yet this refinement was again ascribed to vanity in Scotus, or making parade of his Greek learning by the same blockheadism!

This division of the universe into three exhaustive species he, in the next place, traverses with a tissue of five modes, as he calls what in reality are the *Quinque Voces* or Universals. And this woof and web he follows down through the process of the creation respectively in the five books that constitute the treatise. The scientific purity of the exposition is no doubt blurred by much citation of the Scriptures, the Fathers, and the like, as the grappling-hooks thrown out to seize some anchorage in his rude age, and what his adversaries always charged him with neglecting and despising. But, due allowance being made for these things, we cannot hesitate to say, that his treatise is the only book of regular method throughout those ages, or even to the present day, upon Christian philosophy.

Accordingly Erigena, so far from being averse to method, treats the mere art or part of it called dialectic with constant respect. The following samples may be cited from a number of others, which occur within the space of a few chapters in the first book: "Logic is the *science* of correct reasoning—*bene disputandi scientia.* Logic is the diligent and investigative discipline of all the general and rational *conceptions* of the mind." Speaking of the categories, he remarks: "Especially since that part of philosophy (*i. e.*, logic) is conversant with the division of them into genera, down from the most general to the most special; and again, the collection or synthesis of them backward, along from the most specific upward to the most general." Again: "Logic (*dialectica*, for Scotus too does not distinguish them) is that of which it is the province in all objects of the intellect to divide, to conjoin, and to discriminate

their specific natures, and distribute them respectively into their proper places." Yet this is the man who, M. Haureau tells us, abhorred logic, and ostracised all method from the domain of the sciences! And this, moreover, because he really did revolt at Nominalism! Why, the exclusion would, on the contrary, be the consequences of this doctrine.

But, above all, the text of Scotus makes no mention at all of either method or dialectic, but only grammar—*grammaticam*—which *is* akin to Nominalism. M. Haureau was deluded into taking it for *dialecticam*, in his distress for an argument to prove that Scotus hated logic, and did so for the reason that he was a rank Realist! Even the rhetoric, which is coupled by him not with logic but with grammar, Scotus will not allow to be a thing of mere words. For, says he, as to the topics or commonplaces used in rhetoric, which do indeed fall under the laws of objective nature, they are borrowed by it from the domain "—of what? of logic or dialectic!" *

Here we have the part of logic made so rich in nature and positive science that these qualities are filched from it by the topics of rhetoric! And why, asks Scotus, class this rhetoric and grammar with the arts and sciences, if they be nothing more than instruments or verbal contrivances? I see no other reason for it (he replies to his own question) than that they always wait upon, and cling to the skirts, as it were, of the *great mother of the sciences*, which is logic. † There is, then, the *témèraire contempteur de la logique*, as it suits M. Haureau to represent Erigena!

We abstain from all comment on the foregoing exposures of this most candid as well as capable of the critics of Scotus, and only cite an opposite opinion of his reach in method, from critics who imagined it to verge upon the diabolical.

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* "Nam dum rhetorica de communibus locis, qui ad naturam rerum pertinent, tractare nititur, non suas, sed dialecticas arrifit partes."—Lib., v. 4.

† "Non alium ab causam video, præter quod matris artium, quæs et dialectica, semper adhereant."

Thus the Port-royalist, Nicole, speaking of his famous tract on the subject of the eucharist, says of his seeming contradictions:

"Mais il ne faut pas croire que ces contradictions de Jean Scot part d'un esprit confus et embrouillé. Quand il veut, il exprime trés-nettement ses pensées, et se soutient tant que bon lui semble, sans se contredire. Ce ne sont (les contradictions) que des stratagèmes d'un philosophe plus *payen* que Chrétien, qui voudrais donner cours à ses fantaisies, et les faire recevoir de ceux à qui elles agréent, sans se mettre en danger d'attirer sur soi les justes censures des personnes savantes, qu'il prevoit ne devoir pas les approuver."

This is the ascetic and orthodox conceit of Scotus. So that, considering the real contradictions respecting him, we come to comprehend the pertinence and spirit of a quaint reflection, which he is led himself to utter at the close of one of his books:

"Adversus stultitiam pugnare nihil est laboriosius; nulla enim auctoritate vinci fatetur; nulla ratione sua detur."

But M. Haureau's notion of the theme itself of scholasticism, and presumably that also of the learned body who could "crown" him for it, was (to speak quite frankly, and in fine) but rudimental; and, as to the works of Scotus, not a man among them had ever read them. Thus M. Haureau begins the thesis which became his book with this position:

"Le Realisme, le Nominalisme, le Conceptualisme; voilà les trois systèmes principaux professées dans l'école de Paris du huitième au quinzième siècle."

This is quite correct, and especially as to locality, for it was only in France or Paris that Conceptualism was ever agitated. It was planted in this very school of Paris by Erigena, and with the distinct designation of a third and the supreme doctrine. M. Haureau repeats this formula at the close of his treatise. But, throughout the long interval of his two portly volumes, there is not a sentence, we believe, about Conceptualism. The writers thought by him to lean that way are termed *Nominalistes eclairés*, of whom Occam and his train of veritable mystics are Haureau's model. And

the secret of this queer omission and of most of the other blunders is left out by M. Haureau himself toward the end, in this disclosure of the philosophy at present reigning in the same Paris: "There are," says he, "but *two* schools of philosophy; one upon whose porch is inscribed the divine name of Plato; the other, which proclaims Aristotle as its master. From these spring respectively Realism and Nominalism. It is the history of philosophy in all times." Thus, Christianity, the middle-ages, the three great European races, with the Scholastic and the modern elaborations, have added nothing; and the French Institute is lineal heir to the Lyceum and the Academy.

This apology for M. Haureau may be still more damaging than the impeachment. Another Frenchman, however, has escaped this hoary dualism M. Simon, in his History of the Alexandrine School, has at the close this profoundly just and nearly exact summary:

"Mais ils (les Alexandrins) out du moins le mérite d'avoir définitivement classé le dualisme de la philosophie, et d'avoir entrevu le véritable rapport de la virtualité et de la force avec la détermination actuelle; et par conséquent de l'individu avec les Universaux."

The virtuality of potency is the principle of Realism; the force is, on the contrary, the human principle of Nominalism; the relation of both those extreme agencies combined in the composition of individuals is the complex object of Conceptualism.

The nascent gleam of this concluding and mediatorial survey was just the vision which the Alexandrians were groping vaguely to seize, but which was positively inaccessible to the Græco-Semite intellect, and which gave to Erigena the stupid reproach of being one of them. They did, however, by their semi-religious machinery of triads and enneads, do much to shake the old enclosure of the heathen dualism. But so far from being expelled definitively, as M. Simon fancies, we just observed it in full vigor with his own erudite fraternity, as an avowed inheritance of Realism and Nominalism. For these were but the repetition of it by the Italian and the Gothic races,

who throughout the middle-ages maintained successively the social leadership; maintained it on the one part by the virtuality of the church, and on the side of the Teutons by the force of the State; and thus subjected or kept at bay the nascent organ of the third system, which was finally to link the extremes and wed theology to philosophy. And thus are we once more conducted to the grand mission of Erigena; to the source of the crude illusions about his Alexandrine mimicry; and to the causes why his mission is imagined to have long failed, whereas it has been in reality the fruitful mother of modern science.

Though M. Haureau does not see this lineage, he yet admires Erigena, and gives him a quite different, but, as he thinks, a glorious progeny. "But" (exclaims he) "with what astonishment, *let us even say respect*" (by Academic condescension), "must we not be impressed on beholding the figure of this great doctor, who will cause such agitation in the church and the schools; who will sow the whirlwind and reap the storm, but will be of a temper to bear and brave it all; who will leave no direct heir of his doctrine; but who, at least, will have the glory of having heralded and led the way for Tordano Bruno, Vanini, Spinoza, the most daring *logicians* that have ever sauntered underneath the plain-tree groves of the Academy."

What a medley of incongruities are here thrown together. If Spinoza and the others had been eminent as logicians, where would thus have been the mark of their lineage from Scotus, whom this writer had himself called a "rash despiser of logic." Again, the Platonic Academy seems better known to posterity for dreamers or idealists than for daring logicians. But, above all, if the men here mentioned were undoubtedly daring, it was precisely because they were not really great logicians. They had just enough of logic for the simple processes of mathematics; and, adventuring with this slim stock into the moral and social order, degraded this into their own quantitative pantheism or materialism. A great logician never goes to knock his head against a stone wall. He knows what con-

clusion the given premises will afford him. He does not, like the other great Italian, Galileo, deny them aloud, and repeat them sneakingly *in petto*. He is able to modify to the calibre of his antagonist. or, if this be not possible, to hold his tongue before such people. It is, in fact, the counsel of Aristotle himself. It was just the tactic we heard Nicole stigmatize in Erigena, with whom these people could accordingly not have had the least affinity. Not one of them has, probably, ever made allusion to him.

No, the progeny of Scotus was not Bruno nor Spinoza; nor was it even Kant or Hegel, as claimed by some German critics. It was only for a long time humbler, and took successively a double course, in conformity with the religious and theological factors of his philosophy. At first, and in the religious line, it was the long train of "heretics," from Berengarians, extreme Scholastics, Albigenses, to Calvinists. In the logical succession, the most prominent of the stages may be noted first in Abelard, with his Conceptualist tentatives, and his two teachers, who had reduced for him the extreme doctrines to absurdity; then, pre-eminently, through a countryman of Erigena, the Subtle Doctor with the Franciscan Order, who assumed his name and maintained his doctrine; in the next place, through Descartes, as a great methodical reformer; and finally, for the present, the late Comte and his positivism—of which system, indeed, Scotus proclaimed the exact principles, and which, as founded upon relativity, must be a form of Conceptualism.

It is, indeed, this double course that has deluded the critics, and is echoed still by M. Haureau, about Scotus having left no followers. Thus the thoughtful Auguste Schlegel lamented that the middle-ages had not followed Erigena, instead of Anselm and St. Bernard. But the lament was as groundless in principle as in effect. It was idle to suppose that Nature, on the vast scale of European history, could be shunted off her track, like a modern rail-car, by chance or choice; and it was purblind not to note that, whereas Anselm and Bernard have been receding into pious seclusion with the progress of civili-

zation, the fame and works of Scotus have been ascending in the reverse ratio. It is, then, Scotus who had the real following and the true future. But this was naturally long dissembled by the double ramification, from those who never comprehended either Scotus or Scholasticism.

ART. II.—1. *History of Russia, from the Foundation of the Monarchy by Ruric to the Accession of Catherine II.* By W. TOOKE, F. R. S. 2 vols., 8vo. London. 1800.

2. *Histoire de l'Empire de la Russie.* Par M. Karamzin. Traduit par MM. ST. THERON et JAUFFRET. 11 vols. Paris. 1814–1826.

3. *History of the Russian Empire.* By POLEWOY.

4. *Insurrection in Poland.* By GNOROWSKI. 1830.

5. *Travels in Various Countries in Europe, Asia, and Africa.* By E. D. CLARKE. 11 vols., 8vo. London. 1811–1824.

6. *Pien Ukrainskie wydane.* Pwer P. MAXYMOWICZA v MOSKWIE. 1834. (Songs of Ukraine, published by Maxymowicx, at Moscow. 1834.)

THE vast *steppe* which extends from the Dnieper to the Don (the Tanais, to whose icy waters Horace compares his cold mistress) has been, from the earliest periods of which we have any account, the resort of nomadic and predatory tribes. Here in classic ages roamed the Scythian, whose name among the Greeks was synonymous with rapine and bloodshed. Hither subsequently came the Sarmatian, the Ostrogoth, the Hun, and the Polotzky; and here in the middle-ages arose a powerful confederacy of warlike men, who entered the country, hunted fugitives in search of life and liberty, but gradu-

ally increasing in numbers, and becoming cognizant of their own strength, were at first the scourge, and afterward the bulwark, of the nations of eastern Europe.

Who were the Cossacks that, alternately subjects of Russia and of Poland, preserved a nationality separate and distinct from either, is a question on which much research has been exhausted, without arriving at a satisfactory conclusion. Their own traditions carry them back far into the mists of antiquity; yet it is certain that their name does not appear in history until the fifteenth century, and that the few travellers whose journeys through Russia and Poland have come down to us from an earlier period make no mention of them. Certain similarities of name, and peculiarities of costume and manners, have induced some antiquaries to attribute to them an origin purely Oriental, though the first positive accounts that we have of them find them on the banks of the Dnieper. Their name, *Kosak*, which denotes in some of the Eastern languages a freebooter, and in others a light-armed horseman, has been received as proof of their Oriental extraction; but it is at least equally probable that the signification of the word in those languages arises from the fact that the nations of the East had so constantly suffered from the inroads of the Cossack warriors that the name of Cossack became among them synonymous with a predatory chieftain; while the remoter nations, who had experienced fewer of their raids, but remarked their customary mode of warfare, applied the name of the only light cavalry whom they knew to denote the entire class. Constantine Porphorygenitus speaks in his writings of a country named *Casachia*, which is evidently the modern Circassia. "Beyond the Papagian country," he says, "is the country called Casachia, but beyond Casachia are the Caucasian mountains." *

Many antiquaries have concluded from this passage that the Cossacks originally emigrated from Circassia, and derived their name from its ancient title; and their theory is, to a

* Constantinus de Administrand. Imp. cap. xliii., p. 133, Lugd. Bat., 1611.

certain extent, supported by the fact that among the Cossacks of the Don there is an undoubted Circassian element, and that the name of their ancient capital, Tscherkask, denotes in their language the small village of the Circassians.* What militates, however, strongly against this supposition is the fact that the Cossacks, when first mentioned as a separate race, were found, not on the banks of the Don, but of the Dnieper, and that their first known migrations are from the west to the east. The name of *Casaria* is given by W. de Rubruquis, a missionary who journeyed through that region in the thirteenth century to the country on the borders of the Dnieper,† and Russian history speaks of a people called the Kozares,‡ who migrated from the shores of the Caspian and the sides of the Caucasus, and occupied the region along the coast of the Black Sea. This people appear to have overrun the steppe, and rendered Kioff itself tributary; but they were defeated by the Russian Emperor Sviatoslof in the tenth century, and their existence as a nation annihilated.§ Whether the Cossacks, who, dwelling on the northern shores of the Dnieper, were driven by the Tartars to its southern bank, and thence expelled by the Lithuanians to the extremities of the steppe between the Dnieper and the Don, were the remnants of the lost race, is a question which history as yet has been unable to solve ‖ All that we know with certainty is that, in the course

* Clarke's *Travels in Russia*, p. 371. † Hakluyt, vol. i., p. 80.

‡ "Les Khozars ou Khazars, peuples de même origine que les Turcs, habitaient depuis fort longtemps les côtes occidentales de la mer Caspienne—et soumettaient à leurs armes tout le pays, depuis l'embouchure du Volga jusqu'à la mer d'Azof. Vers la fin du septième siécle, ou au commencement du huitième, ils portaient leurs armes sur les rives du Dniéper."—Karamzin, vol. i., pp. 48, 49. Les Khozars construisaient sur les bords du Don, *où sont maintenant les Cosaques*, la forteresse de Saikel. *Ib.*, vol. i., p. 51.

§ Tooke's *History of Russia*, p. 33 ; note, *ib.*, p. 174. *Byzantine History*, pp. 71, 72.

‖ Tooke speaks (vol. i., p. 121) of a nation called the Kosages who dwelt on the Sea of Azof, and also on the Dnieper, and were subjugated by Russia in 1022—but he gives no authority for this statement.

of ages, a large nomadic race had grown up on the borders of these two rivers; a people of predatory habits, whose home occupations were hunting and fishing; a people without distinction of rank, governed by their own laws, and recognizing only their own elected chief or hetman. It is in this condition that we find the first definite accounts of them in history.

It is not, however, probable that the Cossacks owe their origin exclusively to either an Asiatic or a Russian source. Their *stirps* may undoubtedly be sought among the nomadic tribes of Sclavonians who, in the earliest accounts that we possess, traversed the region of the Dnieper—tribes whose germ was the aboriginal race of Scythians, who roamed the borders of the Borysthenes (now the Dnieper), and commingling with the various nations by whom they were successively over-run, received an infusion of the blood of Western Europe from the Ostrogoths, and an Asiatic element from the Sarmatians, or children of the Medes (Sar in the Oriental languages being the mark of descent), who emigrated from Media, and passing through the defile of Caucasus, settled on the banks of the Tanais or Don.* These tribes, gradually coalescing, formed the race known in mediæval history as the Sclavi or Sclaves.

In the fourth century, a horde of these Sclaves founded a colony on the eastern bank of the Dnieper, of which the capital was Kioff;† while another, penetrating farther north, erected the city of Novgorod. While the former colony were content to develop the resources of the fertile region which they occupied, the latter were seized with a thirst for dominion, and extended their conquests until they reached the shores of the Baltic. As they advanced northward, they provoked the hostility of the Scandinavian tribes, who were not only pirates and sea-kings but mighty men of war. Engaged in conflict with some of these rude nations, they applied to a tribe called the Varages, probably of Norse extraction, for assistance, offering them favorable terms of alliance. But these allies

* *Diodorus Siculus*, lib. ii., p. 155.—Ed. Wetstein.

† Tooke's *History of Russia*, vol. i., pp. 137–145.

eventually proved their most deadly enemies. Ere long, discovering the advantages possessed by the country around Novgorod over their own bleak and inhospitable shores, a vast horde of these barbarians, headed by Ruric the Red and his two brothers, invaded the territory of their former allies and reduced it to submission.*

The conqueror was proclaimed king in Novgorod, but, before he could extend his conquests, he died, leaving his infant son Ivor heir to his kingdom. Oleg, the bold and crafty uncle of the new king, resolved to add Kioff to his nephew's dominions. Having advanced down the Dnieper to within a short distance of the capital, he sent messages to Oskhold and Dir, the chiefs of the Kievians, in which, concealing his name and quality, and representing himself as a merchant *en route* for Constantinople on business of importance, he requested permission to pass through their dominions. This request, having been readily granted, was followed by an invitation to the chiefs to visit Oleg at his ships, he pretending that indisposition prevented him from paying his respects in person. The confiding chieftains accepted the invitation, and visited the ships of Oleg, accompanied by only their ordinary attendants. But, no sooner had they arrived at the vessels, than the Varasgian soldiers, starting from their places of concealment in the boats, encompassed them on all sides; while Oleg, taking in his arms the infant Ivor, uttered in a voice of thunder: "You are neither princes nor sons of princes; behold the son of Ruric!" At these words the soldiers seized the chieftains and murdered them in the presence of Ivor.†

This *coup* rendered the Scandinavians masters of the entire territory which had been colonized by the Sclavi; but the latter, a brave and not a servile race, again and again broke

* Karamzin, vol. i., p. 37.

† Tooke's *History of Russia*, vol. i., pp. 147, 148; Karamzin, vol. i., p. 154. Nestor tells us that Oskhold and Dir were themselves Scandinavians who had taken Kioff from the Kozares. Karamzin, vol. i., p. 146.

out into rebellion against their conquerors. These rebellions, however, were uniformly unsuccessful; and multitudes of the Sclaves, unable to bear the Scandinavian yoke, returned to the haunts of their ancestors beyond the Dnieper, and resumed their ancient nomadic and predatory habits.*

The Russian empire, consolidated under Ivor into one dominion, for a while increased in strength and importance; but, as union had rendered it strong, division was to ensure its downfall. After the twelve sons of Vladimir, a descendant of Ivor, had divided the hereditary empire into as many grand-duchies as there were heirs to possess them, feuds began to arise between duchy and duchy, feuds in which, whether victors or vanquished, misery awaited the agricultural population.† The dukes and their lieutenants occupied small fortified boroughs called *grod;* the peasantry in like manner collected in *grodek* or small villages where they lived. But these were without protection against incursions from neighboring duchies; and many a peasant, on returning at night from the *grod* whither he had carried the fruit of his toil to traffic for money or necessaries, found his hut in ashes and his family destroyed.‡ Ere long, the peasantry became disheartened, agriculture was neglected, and they all took refuge in the *grod*, whence they dared not emerge unless to follow some predatory expedition against the people of a neighboring duchy. In this manner, unsettled and predatory habits became familiar to most of the natives of Southern Russia.§

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* Tooke's *History of Russia* passim—Karamzin, vol. i., p. 158.

† Tooke's *History of Russia*, pp. 213-237.

‡ Polewoy's *History of the Russian Empire.*

"Les villes sont désertes" dit Nestor, "on voit partout les villages en feu, les églises, les maisons, les granges reduites en monceaux de cendres où les citoyens expirent sous le feu des humains ou attendent la mort avec effroi. On n'aperçut plus dans nos prairies ni chevaux ni bétail; les champs sont couverts d'herbe, et les bêtes féroces peuplent aujourd'hui les mêmes lieux habités naguère par les Chrétiens."—Karamzin, vol. ii., p. 135.

§ Tooke's *History of Russia*, vol. i., p. 238.
Polewoy's *History of the Russian Empire.*

The adjacent nations were not slow to take advantage of the intestine discords of this once formidable empire, and in time the Tartars of Central Asia poured into the distracted country and reduced the whole to subjection.* For two centuries Russia remained under the dominion of the Golden Horde, their own sovereigns holding the sceptre only by appointment of their Asiatic conquerors. In the north of the empire, where the tyranny of the Tartars was more lightly felt, the people were contented to remain in their *grod*, paying the tribute and submitting to the exactions of their oppressors. But, in the *steppe* between the Dnieper and the Don, the people were differently constituted. The oppressions of Tartars weighed down their daily life; the nomadic and predatory instincts of their forefathers had been developed in them by the disordered life among the duchies; and, escaping from their persecutors to the banks of the Dnieper, they took refuge on its southern shores.† This is the first mention, *eo nomine*, made by history of the Cossacks—a tribe probably of Sclavic, possibly of Eastern origin, who, having at first taken refuge from the Tartars on the northern bank of the Dnieper, were compelled by their invaders to escape into the wild regions farther south.‡ Here they found wanderers like themselves; roving tribes who had fled from the early Scandi-

* Karamzin, vol. iii., ch. viii., p. 274, *et seq.*
Tooke's *History of Russia*, vol. ii.

† Gnorowski's *Insurrection of Poland.*

‡ Tout porte à croire qu'on les connaissaient en Russie avant même l'invasion des Bâti, et qu'on ainsi designait les Torques et les Bérendins habitant les bords du Dniéper, au dessous de Kief. C'est là que nous trouvons aussi la première demeure des Cosaques de la petite Russie. Tout semble indiquer que les Torques et les Bérendins, appelés alors Tcherkass, portaient aussi le nom des Cosaques; que pour se soustraire du joug des Moguls et Lithuaniens, plusieurs d'entre eux vivaient libres et indépendans, dans iles du Dniéper, entourés de rochers et de marais impracticables, qui s'attiraient aupres d'eux un grand nombre de Russes fuyant l'esclavage, et bientôt se confondaient avec eux pour ne plus former, sous le nom de Cosaques, qu'un seul peuple.—Karamzin, vol. v., p. 377.

navian invaders. With these they coalesced and formed a species of military democracy.* Their communities were scattered villages called *grodzinsko;* their dwellings, a few poor huts built of clay. "Let the flames of invasion," they cried, "consume our huts; in a week we shall plant new hedges, fill them up with earth, cover their tops with reeds, and a new *grodzinsko* will arise. Sooner will the foe be wearied with the destruction of our wretched abodes than we of their erection."†

These wretched but undaunted fugitives were not destined to remain permanently in the refuge that they had chosen. When Osgard, Grand Duke of Lithuania, drove back the Tartars from the banks of the Dnieper, the Cossack fugitives were banished with them.‡ Two corners of land remained at the southern extremity of the *steppe*—the *porogues*, or almost inaccessible islands at the mouth of the Dnieper, and the tract beyond the Don in the neighborhood of the Sea of Azof. Those tracts of land formed the cradle of the Cossacks—those who were called the Zaporogues (dwellers beyond the Islands) —and the Cossacks of the Don. Here, their numbers were reinforced by fugitives from many nations; this was especially the case among the Cossacks of the Don, who not only received into their number multitudes of fugitive Tartars, but absorbed into themselves a race of Circassians who had fled from the Tartar invasion, and whom they found established in the tract which they had chosen for a refuge.§ The Zaporogues, on the other hand, were reinforced by numbers of Poles and Lithuanians, fugitives from justice, or others to

* Polewoy's *History of the Russian Empire.*

† An anonymous Cossack historian, cited Foreign Quarterly Review, vol. 26.

‡ Tooke's *History of Russia*, vol. ii., p. 19.

§ There can be no doubt that the Circassians migrated to the shores of the Don at a period far anterior to the arrival of the fugitives from the west. The Circassian element is at the present day strongly perceptible in the Cossacks of the Don, in their personal beauty, their valor, and love of an active and military life.—See Clarke's *Travels*, vol. i., pp. 371–380.—Karamzin's Histoire de l'empire de la Russie, vol. viii., p. 127.

whose lawless nature the nomadic life of the Cossack seemed preferable to all others.*

The necessity of flight in order to preserve life had taught the Cossacks activity and endurance. With the sense of security which grew up in their new and almost inaccessible habitations arose the desire of vengeance on those who had oppressed them. From the fugitive, the Cossack became the pursuer. No town or village was safe from his rage; and the peaceful habitations along the banks of the Danube, the Bog, and the Dniester, were constantly sacked and burned by these wild horsemen, who, swarming from unknown regions, plundered the wretched inhabitants, and disappeared into their own fastnesses ere forces could be assembled to resist them.

The Zaporogues before long lost almost every trace of civilization, and became a mere race of freebooters, whose sole occupation was war and plunder. So averse were they to the very form of civilized life that the domestic ties were abolished among them. No woman was allowed within their borders. They recruited their population from females on the other side of the river, taking the male children into their own ranks as soon as they could go alone, and leaving the daughters with their mothers. If a Zaporogue married, he was banished from the *stanitza* or principal community on the islands, and obliged to live with his wife on the other side of the river. By degrees, in this manner, a settlement of married Cossacks grew up, allied with the Zaporogues, but forming a distinct community. These married Cossacks were distinguished from the Zaporogues by the name of Cossacks of the Ukraine.†

Although both the Zaporogues and Ukrainean Cossacks

* Gnorowski.

† The sicza (stanitza) was a heap of houses and huts surrounded by a wall of earth. There every thing was in common. When a new year came, the ataman of the Zaporogues used to put to them these questions: "My brave fellows, you must cast lots as to where each division is to fish. Perhaps you may like to choose a new ataman!" "No,"

lived but for war and rapine, and observed no laws except such customs as were established by necessity,* they were, at least nominally, Christians. Priests of the Greek church resided among them, and, although they paid little attention to its teachings, they maintained a superstitious reverence for its priesthood and a bigoted attachment to its communion. This attachment, it will be seen, was the cause of their ultimate absorption by the Russian empire.

The Cossacks of the Don, although more Asiatic in their composition, were much further removed from barbarism than their brethren of the Ukraine. They pushed their conquests nearly to the mouth of the Don, and built a city on some of its islands.† This city, Tscherkask, has been aptly described as a sort of Tartar Venice. Its houses stood on piles driven into the river, and were connected by wooden bridges, which, during the annual overflow of the Don, were their only modes of communication. Around the city grew up many of the appliances of civilization. In later ages it possessed churches richly adorned with precious metals and gems, a theatre, and schools where languages and sciences were taught.‡ The Cossack, enriched with the spoils of his many forays, developed a taste for luxury and refinement. Even in the wild steppes, which he now roamed as a free man, the Cossack of the Don developed the arts of peace as well as war. Villages arose along the banks of the rivers, where the inhabitants devoted themselves to cattle-breeding and fishing. The family tie was recognized, and the rights of property among themselves strictly respected. Yet was the Cossack of the Don essen-

replied they, "thou art good. Command one more year, and let us cast lots." But, if a different answer were given, the ataman took off his cap, placed it on the ataman's staff, and bowed to the people, saying, "Now, I am your brother, a private Cossack."—Muller.

* Karamzin, vol. i., p. 979.

† It is possible that this city, Tscherkask, or a city of the same name, may have existed prior to the arrival of the Cossacks from the west. The Circassian etymology of the name renders this probable.

‡ Clarke's *Travels*, vol. i., pp. 363–367, 383.

tially a warrior. When summoned by his hetman, he left home on a foray *to get himself a new coat;* on his bosom he carried a handful of native soil, to which, if slain on the battle-field, he pressed his dying lips, and sent it by his companions to his wife; if victorious, he returned laden with spoil, and abandoned himself to joviality without thought of the morrow.*

Such warlike neighbors were too dangerous to be overlooked by the sovereigns of the nations in their vicinity. At an early period Stephen Bathory, one of the ablest kings of Poland, succeeded in establishing a league with the Cossacks of the Ukraine, constituting them the guards of the Polish frontier, and giving them a regular military organization under hetmans. But the successors of this king did not govern with his wisdom. The Cossacks were distressed by the extortions of Polish officials, and exasperated by the encroachments of Polish kings who sought to curtail their liberties, and by persecutions of Polish Jesuits who claimed the right to impose on them their own faith. The Cossacks who, with all their half-heathen habits, retained a bigoted attachment to the Greek church, at last rose under their hetman, Kheminsky, into open insurrection. In this they were supported by Alexei, Emperor of Russia, who saw the advantages of attaching them to his empire so strongly as to declare war against Poland on their account. The allegiance of the Ukrainean Cossacks was, as a result of this war, transferred to Russia, in 1654.†

It is probable that the Don Cossacks had become subjects of Russia at a much earlier period; for in the year 1579 they are mentioned as serving in the Russian army.‡ And about the same time the Cossack adventurer, Yermak, flying with a troop of six or seven thousand men from the severity of Ivan the Terrible, roved over the vast plains of Siberia, drove out or subjugated its inhabitants, and presented it to the Emperor

* Polewoy's *Hist. of the Russian Empire.* Karamzin, vol. viii., p. 127.
† Tooke, vol. ii., p. 25.
‡ Storch, tome i., p. 68.

for his pardon.* Thus Russia is indebted to the Cossacks for the bulk of her Asiatic possessions. But the reception of their brethren of the Ukraine was the signal for the revolt of the Cossacks of the Don. In the war between Russia and Poland a Cossack officer had been sentenced to death with what the people considered undue severity. His brother, Stanko Radzkin, accordingly revolted, and established his headquarters at Astrachan.† Allured by the spirit of licentiousness and the hope of plunder, numbers of Cossacks as well as of inferior Russians flocked to his standard. This army, amounting to nearly two hundred thousand men, was, however, only formidable in numbers. Ill armed and undisciplined, Radzkin did not venture to confront with it the army of the emperor, but contented himself with predatory excursions through the surrounding country. He even went so far as to open negotiations with the emperor, offering to deliver himself up with his troops if assured of pardon. The answer which he received was ambiguously worded, but Radzkin, construing it favorably to his wishes, set out with a retinue of his soldiers for Moscow. That capital he was never destined to see; for on the road he encountered a cart containing a gibbet, on which he was immediately hanged and quartered.‡ Astrachan was surrounded by the Czar's troops, the insurgents taken prisoners, and twelve thousand of them hung on gibbets by the highways; while a female Cossack, a nun by profession, who had quitted her convent and fought in male attire at the head of a rebel corps, was burned alive in the public square of Arsamas.

The suppression of the revolt among the Don Cossacks was succeeded by an insurrection among those of the Ukraine, which resulted fatally for the liberties of the latter. From their first annexation to Russia, these Cossacks had been turbulent and unruly subjects. In 1685 they were sent with the army of Prince Galitzin, the favorite of the regent Sophia,

* Clarke's *Travels*, vol. i., p. 375.

† Tooke's *History*, vol. ii., p. 23. ‡ *Ib.*, p. 26.

to invade the territories of the Tartar khan. The disastrous failure of this expedition was attributed to treason on the part of their hetman, Samuelowicz, who was banished to Siberia, and his lieutenant Mazeppa appointed in his place. Mazeppa was devoted to his Cossacks, and, having succeeded in acquiring the favor of Peter the Great, on the disgrace of Sophia and Galitzin, obtained for his people such extended privileges that the portion who had hitherto adhered to Poland crossed the Dnieper in a body and declared themselves subjects of Russia. But a brutal threat, uttered by Peter in one of his fits of intoxication, so incensed Mazeppa that he privately stimulated his Cossacks to throw off the Russian yoke. When Charles XII. advanced in the direction of the Ukraine, the hetman openly renounced his allegiance, and with 5,000 Cossacks joined the standard of the Swedish king.* But the hopes of Charles and Mazeppa were extinguished by their defeat at Pultowa; and, although the defection of the Cossacks had been but partial, the vengeance of the Czar was visited on the whole race. Thousands were dragged in chains to the shores of the Baltic to labor on the public works; and the new hetman who succeeded Mazeppa was subordinated to Menzikoff who assumed the vice-royalty of the Ukraine. Thenceforth the liberties of the Ukrainean Cossacks were at an end. †

The Don Cossacks, habituated to the sway of Russia, and surrounded on all sides by Russian provinces, were not objects of the same suspicion to the Czar as their brethren of the Ukraine. They retained their independent organization and many of their immunities until the reign of Catherine II., when their rebellion under Pugatchef afforded the empress a pretence for reducing their privileges. By her their troops were deprived of their independent organization and formed into regular regiments under officers appointed by the crown; a fixed period of military service was required of the Cossacks as the tenure of their lands and fisheries; and the appointment of their chief hetman was arrogated by the

* Tooke's *History*, vol. ii., p. 56. † *Ib.*, p. 80.

Russian Government.* This was in the first instance rendered more palatable to them by the appointment of Platoff, whose personal popularity reconciled them to the change. It was under this hetman that the Cossacks rendered such distinguished services against the army of Napoleon. They have been amply compared to a cloud hovering around the French army, heading off its advance, destroying its supplies, cutting off its stragglers, and breaking into its ranks with charges that proved irresistible. Clad in a grotesque, foreign garb unlike that of any European nation, flourishing tawdry banners emblazoned with figures of the saints, mounted on poor-looking but swift and untiring horses, armed each with a lance borne upright from the saddle, a sabre, pistols, and a *kamtschu* or whip of twisted leather, their appearance, equipment, and mode of attack, alike contributed to the confusion of their enemies. They did not undertake to meet the foe in a pitched battle; but, when the French army rallied and confronted them, the Cossacks dispersed, spreading out like a fan suddenly flung open, and then joining in a loud *hourra!* rushed from all sides at once on the demoralized foe.†

The Cossacks of the Don, who, under Platoff, achieved such signal successes against the army of Napoleon, under the domestic administration of the same hetman, attained a degree of internal prosperity and civilization entirely at variance with the characteristics commonly imputed to them. Their towns are well supplied with luxuries; education is not neglected among them; and in cleanliness and comfort their homes compare most favorably with those of the Russians. Their costume, consisting of a blue jacket edged with gold and fastened by hooks across the chest, a silk waistcoat, large and long trousers, generally of white dimity, and a sash of yellow, green, red, or black, with a helmet of black wool terminated by a crimson sack with plume and white cockade, renders their appearance singularly martial and picturesque. Polished in manners, lively in deportment, frank and hospi-

* Storch, tome i., p. 73. † Scott's *Life of Napoleon.*

table, fond of amusement, but violent when their passions are aroused,* the contrast to their Russian neighbors impresses every traveller. Distinguished above all people for activity in time of war, the Cossacks at home devote themselves to enjoyments. They have a national dance not unlike the *can-can* of the Parisians † in its principal characteristics, and are fond of feasting and social amusement. Order, however, is steadily maintained among them; and, in singular contrast to their former predatory habits, it is said that a trunk may be sent unlocked through their territory for a distance exceeding five hundred miles without risking the loss of any of its contents.‡

In their religious observances the Cossacks are very devout, though not without some singular superstitions. Before retiring to rest they cross themselves four times, facing consecutively the four quarters of the globe. During a thunder-storm, in like manner, they cross themselves, and bow the head at each clap, uttering solemn invocations. But the most remarkable of their ceremonies is one known as the Benediction of Bread, which takes place every Saturday evening in all their churches. Upon this occasion five white loaves are placed in the middle of each church—a symbol of those with which Christ fed the multitude. The people then pray that, "as with five loaves He fed five thousand, He will vouchsafe a sufficiency of corn in the country for the bread of its inhabitants and bless it for their use." §

The country of the Cossacks, though little cultivated, is distinguished for its natural fertility and beauty. The herbage, rising as high as the knee, and abounding in wild flowers, is never cut, and the steppe presents the appearance of a flowery wilderness. Although, by no means thickly peopled, it is far from being so desolate as it appears to the traveller. The Cossacks prefer fishing to agriculture as a means of livelihood; consequently their villages, and even their isolated dwellings, are all built along the borders of the rivers, while

* Clarke's *Travels*, vol. i., pp. 301, 391. † *Ib.*, p. 306.
‡ *Ib.*, vol. i., p. 278. § *Ib.*, vol. i., p. 368.

the open country is devoid of habitations.* Thus the traveller, after supposing himself in a desert while traversing the open steppe, will, on crossing a river, find himself in the midst of villages. On entering any of these villages, he will find a degree of comfort, and even luxury, for which he was unprepared. The cellars are floored with ice, and on these floors he will see abundance of fish, game, and other delicacies. To the best of these his Cossack host makes him welcome, but steadily refuses remuneration, saying, "The Cossack does not sell his hospitality." †

If the steppes are devoid of human inhabitants, they abound in occupants of another kind. The dromedary from the East roams wild over the plains, and browses on the luxuriant pastures. The suroke, an animal of the marmot species, but resembling in appearance a diminutive bear, perforates the ground with subterranean chambers, or sits erect at the mouth of its burrows, looking out in every direction, and reminding the American traveller of the prairie dog of his own land. The suslic, a smaller and more beautiful animal, builds its underground granary which it stores, like the dormouse, with provision for the winter. The wolf, bear, and jackal also roam the steppes, but not in sufficient numbers to render travel dangerous.‡

One of the most remarkable features of the steppes of the Don, consists in the *tumuli*, or mounds, which are found upon them. These are evidently of artificial construction; but tradition is silent as to their origin. Such of them as have been opened, were found to contain bones of men and horses, antique vessels of terra cotta, and implements of war. The Cossacks declare that gun barrels of an ancient workmanship have been found there, which, if true, would establish the knowledge of gunpowder to have existed among the oriental nations at a period long anterior to its discovery in Western Europe.§ When these tumuli were erected is

* Clarke's *Travels*, vol. i., p. 323.
† *Ib.*, p. 307.
‡ *Ib.*, pp. 325–331.
§ *Ib.*, p. 354.

not known, but they are mentioned by W. de Rubruquis in the thirteenth century. "We journeyed," he says, "towards the east, seeing nothing except the earth and sky, and occasionally the sea upon our right, which is called the Sea of Tanais, and moreover the sepulchres of the Comani, which seemed about two leagues distant, according to the way that their ancestors were accustomed to be buried." *

Who these Comani were we have no indications; although the geographical position of their territory is ascertained from the voyage of the ambassador of Pope Innocent IV. to Tartary in the year 1246, as follows:

"We journeyed through the country of the Comani, which is all flat, and has four great rivers. The first is called Neper (Borysthenes), the second is called Don (Tanais), the third is named Volga (Rha), the fourth is denominated Jaec (Rhymnus)." †

Whether these were direct ancestors of the Cossacks, or a prior race extinguished by them, is one of those problems for which no solution has been found. A tradition exists among the Cossacks, that Alexander the Great once crossed the Don, and erected a city on its banks.‡ It is certain that two Grecian columns have been found there which antiquarians suppose to be στηλαί of Alexander mentioned by Ptolemy as in the vicinity of the Tanais. A vestige of the classical title of the Cossack river still survives in the name of one of its branches, which, though set down on the maps as the Donetz, is by the Cossacks pronounced Donætz, or more frequently Tanætz, a name from which we can easily trace the

* "Ibimus ergo versus Orientum nihil videntes nisi cœlum et terram et aliquando mare ad dextram, quod dicitur mare Tanais, et etiam sepulturas Comanonum quae apparebant nobis a duobus leucis, secundum quod solebant parentelae eorum sepeliri simul."—Itinerarium W. de Rubruquis, anno 1253.—Hakluyt, vol. i., p. 47.

† Ibimus antem per tenam Comanonum, quae tota est plana, et flumina quater habet magna. Primum appellatur Neper (Borysthenes) Secundum appellatur Don (Tanais) tertium dicitur Volga (Rha) quartum nominatur Jaec (Rhymnus).—Hakluyt, vol. i., p. 47.

‡ Clarke's *Travels*, vol. i., p. 358.

classical appellation of Tanais and the modern corruption of Don.*

The Don, like the Nile, annually overflows its banks, and turned the streets of the ancient Tscherkask into broad canals.† At this season, when approached from without, the city appeared to float on the water. The only mode of entering the town during the period of inundation was by means of boats, and the sole communication between the houses was by wooden bridges protected by posts and rails.‡ The walls by which the city was originally surrounded were sapped away by successive inundations,§ and the air rendered pestiferous by the festering marshes which remained on the subsidence of the flood. Yet this town contained seven churches, two of which were magnificent; its courts of justice, its public academy, and its shops filled with rare and costly articles.‖ Since the commencement of the present century, the malaria arising from the annual overflow has induced the inhabitants to remove their city to the mainland, and old Tscherkask has become a thing of the past.¶

The Ukrainean Cossack is altogether a different being from the Cossack of the Don. In the course of generations he has been tutored into civilization; but the iron of subjugation has entered into his soul. The Don Cossack, living in the midst of his own people, preserving his own institutions, rich with the spoils of ancestral forays, dwelling in cities of his own erecting, or roaming his wild steppes like a free son of the soil, is careless, genial, light of heart, and extends the ready hand of friendship to the stranger. The descendant of the Zaporogue, on the contrary, is taciturn, thoughtful, and reserved. His step is slow, his look sullen, and his speech abrupt. No less shrewd and intelligent than his brother of the Don, experience has rendered him gloomy and suspicious, seeing in every stranger a foe. Yet is the Ukrainean faithful to his word, warm of heart, and resolute of purpose. To those who are admitted to his friendship, he reveals a cheerfulness

* Clarke's *Travels*, vol. i., p. 337. † *Ib.*, p. 355.—*Heber's MS. Journal.*
‡ *Ib.*, p. 361. § *Ib.*, p. 389. ‖ *Ib.*, pp. 363–368. ¶ *Ib.*, p. 359.

which would not have been predicated from his slow mien and gloomy aspect.* Finally it is in the Ukraine that the poetry of the Cossack has been developed, poetry of a unique nature, and deserving of more study than has hitherto been bestowed on it.

The poetry of this singular people, although copious and varied, has for a long time been preserved, like the ancient British ballad, only by tradition and the minstrelsy of the people themselves. It was not until the present century that a Polish editor, Lach Scymer, drew the attention of the public to the singularity and beauty of their songs, by publishing two of them in a periodical edited at Vilna. The interest excited by these songs induced other authors, Polish and Russian, to turn their attention to the subject; and in 1834 a collection of nearly three thousand songs of the Ukraine was published at Moscow by M. Maxymowicx. An able English writer has translated several of these songs, and the student of poetry is thus enabled to add one more department to the treasures already in his possession.

The tone of the Ukrainean poetry is, like that of the effusions of most northern nations, generally sad. While the Grecian and Roman song writer revelled in lays of love and wine, and the epic poet swelled the hearts of his hearers with the triumphs and glories of their ancestors; while the poet of the East gathered together every image of beauty and voluptuousness to enthrall the senses through the imagination; while the mediæval poet of the south of Europe was by turns gay, tender, and romantic; the poet of the north, whether learned or unlearned, poured forth in song the sorrows of his race, or froze the blood with tales of mystery and crime. The old Norse Eddas, even when they recount the victories of their sea-kings, are stern to repulsiveness; the Danish and Icelandic poets sang oftener the death-song than the bridal hymn of their warriors. Mr. Black, in his novel of "A Princess of Thule," has indicated the same peculiarity in the

* Polewoy's *History of the Russian Empire.*

fishermen of the Hebrides, whose songs are all of shipwreck and death. What may then be expected of a people whose history for centuries has been one of oppression and isolation? Their epics are but a chronicle of useless victories or melancholy defeats of the Cossack race—their songs chiefly dirges for the warrior whose bones are whitening on the battle-field, or the wail of the maiden who lingers broken-hearted on the banks of the Dnieper.

The poems of the Ukraine are of two classes—the *duma*, a species of ballad epic which recounts the fortunes of their warriors in the field—and the song proper or ballad. In each class of poems there is a strange, wild beauty. The language is fierce and abrupt—the imagery, taken generally from the natural objects most abounding in the steppes, is novel and striking. Both duma and ballad preserve a uniform elevation of tone—the poet, speaking from his heart, never condescends to be familiar. Rapid and concise of diction, they yet abound in ornament; but it is the ornament with which the unlettered and imaginative unconsciously embellish their narrative without thought or preparation; such ornament as characterises the language of the Scottish Highlander or the speeches of the American Indian.

The duma, which is the loftiest form of the Ukrainean poem, consists of the songs sung by the Badura or Cossack bards, and records historical or at least traditional events. These are narrated with a richness of imagination, a copiousness of imagery, and an energy of diction that remind the reader forcibly of Ossian. The antiquity of the duma is manifest from the fact that the wars of which they treat are wars against the Poles or the Tartars. It is to the Pole that the hatred of the poet is directed, and from the Tartar that the images of horror are gathered. Unlike the epic of Greece and Rome, the duma do not seek to flatter the vanity of the Ukraineans; the poems, on the contrary, dwell as much on their sufferings as on their renown, and are in many instances but a wail over the afflictions of Ukraine or the death of some Cossack hero. This antiquity is further manifested in the imagery of the

duma. It breathes the spirit of the time when imagination endowed animate and inanimate nature with human sympathies and mysterious powers. The birds of the air, the plants of the steppes, even the winds of heaven, are considered as sentient and intelligent beings, sympathizing with and warning the warrior and his friends. The cuckoo bewails the death of the Cossack or warns him of approaching danger, the eagle, while rending the hair from his dying head, receives his parting reports to his mother.

"The raven will croak flying over the steppe; the cuckoo will mourn in the grove; gray hawks will moan; swift eagles will droop; and all this for their brethren, for the dauntless Cossack companions. What! did the whirlwind bury them in the sand, or did they sink into hell, those dark men? They are no more seen; they are neither on the steppe, nor on the Tartar plains, nor on the Turkish mountains, nor upon the black hills, nor on the fields of Lachy. The raven will mourn, will scream, will croak and fly over the stranger's land. And then, lo! bones lie strewn about, swords are flashing, bones crack, broken swords clash, and the black magpie looks grim and stalks over the plain."

This personification, characteristic to a certain extent of all primitive poetry, appears in the duma to be less a poetical image than an expression of the poet and the hearers' belief. In the mind of the Cossack poet the winds really cry over the plain, "What did ye with our hetman?" and the eagles scream and the larks sing, "Where did ye make our hetman's grave?" not figuratively but in reality. When the Cossack warrior apostrophizes the mountain, the audience await the mountain's response, and the response is to them as actual as the apostrophe. When the Cossack dies alone on the plains, the cuckoo sits at his head and bewails him with a sister's grief.

"Whence came the brown cuckoo that sat by his head,
That sat by his head and sang piteously?
As a sister bewails her brother dead,
Or a mother her son, so wailed she."

The cuckoo is evidently believed to lament in earnest the brave warrior who has perished from hunger and fatigue in his flight through the dreary steppe; and even the wolves who crunch

his bones and the eagles who tear the eyes from his head join in a dirge of sorrow at his untimely fate. The cuckoo, it may be observed, is supposed by the Cossacks to possess the spirit of prophecy. The duma, which, even while commemorating victory, wails hopelessly over the destiny of the Cossack race, thus expresses the popular belief:

"And our people, too, shall be unhappy as the cuckoo hath sung. She sang what she heard among the saints. What she has sung will surely happen."

The duma in many instances present a singular, but among rude people not uncommon, *mêlange* of Christian faith and devotional observance with a spirit thoroughly savage and heathenish. In the very duma from which we have just quoted the poet piously exclaims:

"May God protect us! He knows the issue, as He knows what our hetman meditates, what he designs—our hetman, whom He will assist with all His might. It is not for us to know it. It is our part to pray to God; to be resigned in His presence."

The Cossacks going into battle, at the same time that they wheel their chargers, brandish their swords, and beat their drums, pray to God and sign themselves with the cross; but when they have vanquished the Lachy (the Poles) in all the crossways:

"The Lachy begged for mercy, and did not obtain it. The Cossacks do not give quarter."

The very banners which the Cossacks displayed on confronting the Poles were emblazoned with similar mottoes of mingled piety and revenge:

"To the Christians peace; to the Lachy foes the infernal banquet. For him who erects the cross, the cross awaits."

Before taking leave of this duma we must notice a remarkable specimen of poetical diction. The poet is describing the approach of the Poles:

"From beyond the mountain a cloud rises—it rises, it comes forth; it thunders toward Czechryn; it sends forth its lightning over Ukrania; it is the Poles, who have thrice crossed three rivers. These are not

clouds thundering with sacred thunder in the heavens; they are not saints being led into the presence of God. They are the Lachy, beating their drums and sounding their pipes and trumpets."

The melancholy nature of the Zaporogue or Ukrainean Cossack, presenting so marked a contrast to the careless joviality of the Cossack of the Don, furnishes the key-note to all the minstrelsy of the Badura. The duma may exalt the Cossack's fame, but they remind him of its transitoriness; they may commemorate his victories, but they warn him of their emptiness; and hold forth to him no better destiny than to whiten the plains with his bones, accomplishing no permanent result; no better prospect for his people than to be forever glorious fugitives and wanderers:

"What if our Cossack heads be scattered on the steppe, and washed, too, with our native blood, and strewed over with our broken swords? It shall perish like dust, this Cossack fame of ours, which, thief-like, has overrun the world; which stretched like the steppe, and spread over the world with a sound of the roaring of the wind."

But this very hopelessness only brings out more broadly the indomitable valor and constancy of the Ukrainean Cossacks. Whatever may be the result, there is for them no word of surrender. Their corpses may strew the plain, but so long as they live they will go forth to the battle. The Ukraine may never be happy, but she will never resign herself to subjection. Even an outlaw, ever isolated, ever in bloody conflict, but going to the fight as undauntedly as if the horrors of the end were not clearly seen and realized, there is that in the stern and unflinching nature of the Ukrainean Cossack which commands more sympathy than does his prosperous brother of the Don.

For it must not be forgotten that the Badura have proved true prophets. The Ukrainean Cossack is at this day a vassal, poor, an object of suspicion and hate to his powerful masters, but also brave, resolute, and enduring; with little present and no future living in the memories of the past. Even the fame which "stretched like the steppe, and spread over the world with a sound like the roaring of the wind," has dissi-

pated with the wind to naught. It is this reflection which lends a special interest to the foreboding strains of the duma.

The same melancholy minor pervades the songs proper of the Ukraine, although they deal with tenderer and simpler subjects. From their general character we may presume ihem to have been mostly ballads composed and sung by the women in the absence of their husbands, brothers, and lovers. It will be observed that a strong vein of superstition pervades the majority of their songs—a belief in omens usually regarded in reference to the fate of the absent, and a belief in dark spells which even the young girls of the race know well how to weave. Sorcery would appear the province of the young as well as of the old; and the maiden, wronged by her lover or jealous of a rival, seems to have had as ready recourse to the witch's caldron and the poisoned drug as the veriest hag who ever haunted a blasted heath.

Both the above-mentioned characteristics appear in the song of the Sentrawa, which is the name given to a species of anemone. Notwithstanding its melancholy, it possesses a simple and touching beauty which recalls some of the minstrelsy of the Scottish border:

"The aged woman went weeping, weeping,
Sadly she made her wail;
The aged woman about her dwelling
Went mourning like an old quail.

"The young sister plucked the Sentrawa,
The flower foreshadowing doom;
'Oh, mother! what does the Sentrawa say?
Does it tell of the Cossack's tomb?'

"'The Sentrawa grew in the field, my dove,
Sorrow plucked it and gave it thee;
There is sorrow enough, for thy brother John
From the tomb cannot wakened be.'"

Of the use of sorcery by the young as well as the old, we have an example in the wild and uncanny song of Gregory:

"Oh! do not thou go to the feast by night,
Gregory, O Gregory!
There are witches among the maidens bright,
Gregory, O Gregory!
Beware of the maid who has the dark brow
For her fatal spells she will o'er thee throw.

"She dug up the plant when the Sunday came,
Alas for Gregory!
On Monday morning she washed the same,
Alas for Gregory!
On Tuesday the baleful plant boiled she;
On Wednesday a poisoned man was he."

As in the duma, the element of hope appears entirely absent from the Cossack songs; sometimes they echo the pensive strains of memory sighing over the past, but in general the dreary present and the relentless future are their only theme. Even the Cossack warrior, when going forth to the war, has no better comfort for those whom he leaves behind him than the words:

"Oh! sister mine, gather the sand of the plain,
And the grains of sand on the bare stone sow,
And water it well with thy tears for rain,
And to visit it daily at gray dawn go.
When the sand shall spring up like the grass of the plain,
Then, sister mine, look for thy brother again."

It is seldom that we find two representative branches of the same race presenting such strong contrast of circumstances as the descendants of the Zaporogue and the Cossacks of the Don. The one, free as the steppes on which he treads, happy in the enjoyment of his own institutions, the possessor of wealth untold, and luxuries which the Russian himself might envy, lives only for the present moment. The other, dwelling sternly among the ruins of his ancient liberties, his lot poverty, his companion suspicion, broods sadly over the unalterable past. It must be admitted that the former picture is the more attractive; and, also, that the Don Cossacks, by their career in earlier ages, have better deserved their prosperity than their brethren of the Ukraine. Still, when we read the

poems of the Ukrainean Cossack, and learn the secrets of his inner life, we feel that his was likewise a noble nature. Encompassed on all sides by deadly enemies, persecuted in his institutions, his associations, even his faith, the object of suspicion and hatred to Pole and Turk, Russian and Tartar, it is not strange if he became the bandit and scourge of neighboring nations that history represents him. But, when we see his unflinching devotion to his faith and to his people—when we see him for generations fearlessly offering his life in a struggle of whose utter hopelessness we find him aware from the first, without prospect of reward, merely because the Cossack could not voluntarily surrender his liberty, we feel that he is a grand figure in history—the grander that he has not hitherto enjoyed even the poor boon of having his greatness recognized. These few lines from one of their own poems might be fairly considered to typify the sole aspiration of the Ukrainean Cossacks, and how little that aspiration has been realized:

"Oh! the tomb in the field to the wild wind spake,
And that lonely tomb to the wind spake so:
'Blow over me, wind, lest I withered be,
Blow over me fresh, lest I blackened grow.

"'Blow, that the young grass may spring up upon me,
That the young grass upon me may ever be green.'
No sun lights that tomb, and no breeze bloweth there,
And far, far off only, the grass is seen."

While the stern and solitary Cossack of the Ukraine or Little Russia is the sole descendant of the ancient Zaporogue, the Cossack of the Don has become the parent of numerous and extensive branches, of which the principal are the Cossacks of the Volga, the Terek, the Grebeskoi, the Ural, the Yaik, and Siberia. It will thus be seen that from the Dnieper to Kamschatka, the Russian Empire possesses along her southern border a military cordon of people, differing from her in race, in character, in institutions, bearing her little good-will, yet constituting the most powerful bulwark of her dominions. That a race whose nucleus was a band of hunted

fugitives, whose increase arose from nations differing in origin, in language, in faith, Circassian and Pole, Sclave and Tartar, who at first roamed the steppes with no more definite object than the preservation of life by flight, and whose increasing strength served only to render them the terror as they had once been the scorn of all surrounding nations; that such a people, consolidated into a distinct race, preserving intact their manners, customs, and institutions, should ever be the chief bulwark of the nation who was long their greatest tyrant, is one of the marvels of history. To many a reader, even of the present day, the name of Cossack presents scarcely any other image than that of the marauder of the seventeenth century. Yet it would be difficult to find in the history of nations a people who, deprived of independence, have preserved through so many generations their institutions, their poetry, their manners and customs, and their indestructible nationality, so eminently as the Cossacks of the Don and Ukraine.

ART. III.—1. *Some Curious Experiments and Researches into the Nature of Certain Things.* New York. 1871–'75.

2. *Memoirs and Analyses of Meat Extracts and other Valuable Commodities.* Brochures. New York.

3. *Essays on Metaline as a Lubricator.* By Prof. C. F. CHANDLER, PH. D., Dean of the Faculty, School of Mines, Columbia College; President of the Board of Health, etc., etc., etc. Assisted by several members of the American Institute, said to be conspirators against the said Metaline. With an Appendix on Dripping Pans, etc.

No name is more abused among us at the present day than "scientist"—none is so often assumed without any real claim. The merest smatterers—those who have but the vaguest ideas even of the elementary principles of any science whatever—dub themselves "scientists," and wish themselves considered as almost unfathomable in their knowledge of "the nature of

things." But what is stranger, and much more to be deplored, a large proportion of the public accept their vain, ambitious pretensions, and regard them as oracles. It has become a trite saying that the age of faith is passed; but it is not so. Faith has only changed its objects. Formerly those objects were chiefly spiritual; now they are chiefly material.

It is not, however, in its theological aspects that we propose to view the question; that we leave to the divines, whose peculiar duty it is. We will only remark on this point that surely it is less degrading to be credulous in regard to the affairs of a future, or distant world, than to be so in regard to the affairs of earth. Even atheists admit that there is more imbecility in being unduly credulous in things earthly than there is in being so in things heavenly. In short, it will be agreed by the sensible portion of all sects and denominations, Heathen as well as Christian, that no system of religion of the ancient or modern world, however false or absurd, has been the basis of a more grovelling superstition than that which invests three-fourths of our so-called scientists with the attributes of oracles.

But let us not be misunderstood. We do not allude to those who claim to cultivate astronomy, mathematics, geology, or logic. These are sciences which do not admit of much imposition on the part of those who would seek fame or profit by claiming to be their votaries. Chemistry is the great thing for such. With no other science can they make such bold, hollow pretensions, or secure such handsome rewards in money or "trade." Far be it from us to disparage, in any manner, a science with which are associated such illustrious names as Berzelius, Gay-Lussac, Lavoisier, Priestley, Dumas, Laurent, and a host of others. Indeed, none value it more than ourselves for the incalculable good it has done, and is doing, for modern civilization. In proof of the fact we can refer to many articles we have written in this and other journals with the view of illustrating its advantages and encouraging its study. Moreover, there is no science to which we have devoted more attention ourselves, or from the study of which we have derived more real gratification.

By all means, then, let chemistry be studied, and as thoroughly as possible. It is not against the science that we utter a word, but against those who, while having but an exceedingly scanty knowledge of its principles, pretend to be masters of it, and use it chiefly, if not exclusively, as a means of gratifying their greed for gain.

We do not make these remarks hastily, or without good reason. For the honor of that beautiful science it is really painful to us to mention many things done in its name in New York. Thus, for example, how few of our readers would suppose that there is scarcely a restaurant in the city, of any extent, that has not a "scientist" of the class alluded to connected with it as an "analytical chemist." If the soup, pudding, or sausage, etc., is found unpalatable, indigestible, or worse, this functionary is always ready with an "analysis" or "description" to prove that it was the customer's stomach, and not the soup, pudding, sausage, etc., that was at fault. Sometimes the "scientist" receives quite a handsome salary for these valuable services, but generally he takes his pay "in trade"—that is, he obligingly proves, by example as well as by precept, that the viands instead of being defective are of the best quality.

It should be remembered that even a few dollars a week from a dozen or a score of eating-houses, not to mention choice meals and wines, amount to something comfortable in the year. Then there are the whole tribe of quack doctors and manufacturers of patent medicines, each of whom has more or less important work for our scientist. Not a drug in the market claiming to cure all manner of diseases which is not "analyzed," from time to time, by an "eminent chemist," who certifies that every ingredient entering into its composition is exactly the right thing.

The same is true of each of those numerous preparations which are said to have such wonderful effects on the hair, the teeth, the breath, the complexion, etc.; so that if the hair falls off, or becomes prematurely gray instead of growing more and more luxuriant and glossy under the preparation as

promised; if the teeth corrode and drop out one by one; if the breath becomes more and more offensive instead of sweet or "aromatic;" if the complexion turns any color but the natural or healthy one—the certificate of the "analytical chemist," or scientist, is always at hand to convince the victim that he may thank the "preparation" that his case is not a hundred-fold worse than it is!

To our scientist it makes no difference whether the preparation be for the hair, the teeth, the complexion, or the stomach; he is as much at home in "flavoring extracts" and cordials as he is in pomatums or dentifrices, and he can determine the superior quality of whiskey or lager-bier as readily as he can show that oxygen is not nitrogen—that is, provided his fees or his perquisites are not forgotten. If they are, then it is quite another matter; ten to one that there has been extensive and probably poisonous adulteration lately!

The constant fear of our thrifty scientist is a deficiency of oxygen. This is his shibboleth. According to him, if we have only a reasonable supply of oxygen, we may bid defiance to all diseases; there could be no such thing as an epidemic. Yet this scarce thing—scarce especially, it seems, in the city of New York—is acknowledged by every chemist worthy of the name to be the most abundant element in nature. Not only are eight-ninths of all the water on the globe, including oceans, lakes, and rivers, four-fifths of the weight of all vegetable bodies, and three-fourths of that of animals, oxygen, but about one-half of the solid rocks. Let us suppose that our scientist himself weighs 154 lbs.; if he is constituted in the usual way of mortals, an analysis of his carcass would prove that considerably more than half of it (111 lbs.) is oxygen. And, if he is in the habit of helping himself freely at the restaurants as represented, it would be found to contain from 21 to 24 lbs. of carbon, according as the adipose matter is more or less developed; but we think that the element phosphorus would be found rather small—probably not more than 1 lb.

Since the above remarks were written, our attention has been called to a certain controversy between Prof. C. F. Chandler and the American Institute. With this controversy, or those who have taken part in it, on either side, we have nothing whatever to do. We have never sought to influence the American Institute, or any of its members, favorably or unfavorably, for friend or foe. Further than to have made some inquiries of one of its judges—a gentleman we had never seen before—relative to the matter alluded to, we have no acquaintance with any member either of its Board of Directors, or Board of Managers, as such. There is no personal reason, therefore, why we should take the part of the American Institute any further than the facts of the case, as we understand them, may seem to urge us as a matter of duty and justice; nor shall we.

And we have just as little personal reason for saying a harsh word of Prof. Chandler; nor have we the least wish or inclination to do so. At the same time we feel that, as public writers, we have a duty to perform, and from this duty we shall not shrink. We will give our opinion in the present case as freely as we have given it in several cases of the past, some of which were similar to it, at least in one respect.

But let us first disclaim, distinctly, placing Prof. Chandler in the same category with the "scientists" whose operations are exhibited above in outline. We do not want to connect him with them any further than the facts may seem to indicate such a connection; otherwise we should be unjust, and our criticisms should have no force. Thus, for example, we do not say, or insinuate, that Prof. Chandler performs the duties of an analytical chemist for a number of restaurants, or for any restaurant, on any conditions whatever. We do not know whether he does or not, but we rather incline to the latter opinion, if for no better reason than that the Professor's purse is made pretty heavy altogether independently of those petty sources. It seems that our municipal treasury, the treasury of Columbia College, and the treasury of at least one gas company, furnish that gentleman with an amount per annum

which might be supposed to satisfy the ambition of most scientists even of the best class. Especially would this be admitted by those who believe that the three rich positions mentioned differ but very little, if at all, from sinecures. Yet, the Professor is very much misrepresented in numerous printed "analyses," certificates, recommendations, etc., if he is not connected directly, or indirectly, with several other institutions, *i. e.*, enterprising companies or associations, claiming, on various grounds, to be benefactors of the human race, but much more frequently through the human stomach, than the human brain, as in the case of the "San Antonio Meat Extract Company," whose handsomely-printed documents have secured him extensive notoriety, if not genuine fame.

Before glancing at the various lucrative positions said to be held by Prof. Chandler, we confess that we have never been able to see what just claim that gentleman has to any distinction as a scientist; although, as we will show further on, we have had some opportunities, from time to time, of judging, in our humble way, from his performances.

We cannot help thinking that whatever he possesses in this way he owes to the kind friends who had him appointed Professor in wealthy old Columbia. Whatever the School of Mines is, as compared to other schools, so-called, it is the great thing of its kind in New York. Ergo, its head, is a great scientist *ex officio*, if not *ex facto*, or *ex veritate*. Accordingly, the legend "of Columbia College" at the end of an "analysis" has great force with that large proportion of our people whose faith is much greater than their intelligence or their shrewdness. Prof. Chandler is said to have great deference for those who have a heavy purse or a large estate. It was but natural, then, that he should have made a pet of a son of the late Mayor Havemeyer, although nothing more than a pet—certainly not a scientist, or a less thing, even as scientists go in New York. Everybody knows how generous our late Mayor was in rewarding his friends by giving them sinecures whenever he could. Accordingly the Professor was induced to accept the position of President of the Board

of Health; of course he had to be pressed a great deal, but claiming, as he does, to be both a patriot and philanthropist, he could not refuse his valuable services! As for the small consideration of $6,500 per annum, that, we were assured, had nothing to do with his acceptance. Of course, a large number said that this appointment was a capital idea; with the School of Mines, the Board of Health, the Metropolitan Gas Company, etc., under the direction of the same "analytical chemist," there might be no fear of the more serious class of diseases any longer. And we are informed that, in order to make this great consummation doubly sure, the alumni of one of our medical colleges dubbed the Professor "M. D.," without requiring that he devote any particular attention to the healing art, or undergo any examination as to his knowledge thereof.

At all events, Prof. Chandler has now been President of the Board of Health some two years or more. But has the health of the city improved in that time? Is it not notorious that, on the contrary, it has grown worse. Very soon after his appointment, it was found that there was a very great deficiency of oxygen! It seems, judging from the results, that that deficiency has not only continued since, but has increased at a large ratio from one pay-day to another. Let those who doubt this try to inform themselves as to the mortality from contagious diseases, especially from small-pox and diphtheria during the past two years. When this investigation is properly made, it will be found that, except during the prevalence of cholera or yellow fever, there was never so much sickness in New York, or so large a mortality in proportion to the population, as there has been under the auspices of Professor Chandler, Ph. D., M. D., Analytical Chemist, etc., etc. Nay, more, it will be readily admitted by all impartial men, capable of making intelligent comparisons founded on work actually performed, that Judge Bosworth, the predecessor of Prof. Chandler, performed his duties much more faithfully and more efficiently, as far as it was in his power, than his successor has done. One reason of the very different results accom-

plished by the two presidents of the Board of Health, is that, while Judge Bosworth would give courteous and careful attention to applications made to him for the removal of dangerous nuisances, Prof. Chandler has in too many instances proved himself to be too great a personage to occupy his thoughts or his time with such trifles. This is no matter of hearsay, but a fact to which we can testify from our own knowledge.

If the facts are otherwise, why can they not be seen? Wishing to learn what Prof. Chandler can say for himself as President of the Board of Health, we have several times sent a messenger to the office of the Board in search of statistics, but with no result. Finally we go ourselves, and the information we receive is, that the Board has published no report since 1872!

It would be a great mistake, however, to suppose that Prof. Chandler has passed all this time without showing the public how infinitely valuable his services are, and how much the salary of $6,500 falls short of paying for them in full. But no such mistake is possible to those in the habit of reading our morning papers, with even tolerable care, for the Professor has "analyzed" various substances from time to time, and had the wonderful results duly proclaimed, amid the loud plaudits of editors of unbounded faith in "modern science." But, somehow or other, so far as we have seen, not one of these analyses, or of the opinions or certificates based on them, is correct. Thus, for example, who does not remember his celebrated analysis made in his official capacity of the milk sold in New York. The pith of it was that the milk was mixed with water in the proportion of one quart of the latter to three quarts of the former. This, of course, was something novel, and everybody admired the learning that was equal to such a discovery, even in our enlightened age and country! This, however, was but a small part of the work. It is one thing to discover that disease exists, but it is quite another to cure that disease. The remedy of Prof. Chandler for the milk is substantially as follows: Take the specific gravity of the milk and ascertain the amount of water it contains by evaporating

to dryness a weighed sample. Then, if we assume the specific gravity of pure milk to be from about 1,029 to 1,032, whenever the gravity falls much below, the milk may be considered as adulterated with water. The merest tyro in chemistry could prove, by very little study and attention, that this is far from being true. It should be remembered that pure milk contains from 70 to 90 per cent. of water, according as it is more or less rich or otherwise. When carefully deprived of its cream, it has, according to Berzelius, a specific gravity of about 1,033, and in every 1,000 parts of it there are 928.75 parts of water, 28 parts of caseous matter, etc. And we have the explicit testimony of Gay-Lussac and Thenard to substantially the same effect. We maintain then—although we do not call ourselves scientists—that the test of Prof. Chandler is no test at all. The only true test is that which takes the serum as a basis. Let those who doubt this turn to almost any respectable treatise on chemistry.*

It may be remembered that Prof. Chandler made a similar display of his scientific skill in his official capacity some time ago, in a sort of sensational report on the danger of using kerosene as a substitute for illuminating gas. According to the analytical chemist of the Board of Health, kerosene was a frightful thing; but we believe it was not generally understood then that the Professor was, as we are informed, at the same time analytical chemist to at least one of our gas companies. Be this as it may, kerosene is not the dangerous, terrible thing he represented it. It is no more an explosive substance than water. Like water, if experimented upon at the ordinary temperature of our rooms, instead of exploding it extinguishes flame dipped into it with a taper. It is only when it is adulterated, and its vapor mixed with atmospheric air, that there is any danger in it. And when olefiant or illuminating gas is mixed with air it explodes in a similar manner; and there is excellent reason for the similarity, since the same piece of coal which yields kerosene is also

* See Turner's large work, edited by Dr. Bache, pp. 622–624.

capable of yielding olefiant gas, as well as hydrogen, naphtha, ammonia, carbolic acid, creosote, etc., etc. If, then, kerosene ought to be avoided as a dangerous thing because when badly manufactured, or adulterated, it sometimes causes explosions, what will be said of illuminating gas which, when mixed with air, without any adulteration, will explode with tremendous and destructive force?

We might mention various other "analyses" made by Prof. Chandler, which are equally at variance with the facts. We cannot say, however, that he is wrong in his researches into the nature of substances like the "San Antonio Meat Extract." True, we have never made any attempt to ascertain whether he is or not; but we are assured that he is an excellent judge in affairs of the stomach, and we have no reason to doubt that such is the case.

Our President of the Board of Health, Dean of the Faculty of the School of Mines, etc., may also be a very good judge of the qualities of olefiant gas, but if so, certain it is that his judgment does not seem to be exercised in favor of the consumers thereof. It may not be true that the Professor is employed by the Metropolitan Gas Light Company. Perhaps it is but a slander upon him that he acts as analytical chemist for that rich, extortionate monopoly, and occasionally demonstrates, by analysis, that its gas is excellent, while it is notorious that it is execrably bad! Although several who ought to know, and in whose veracity we have confidence, have assured us that Prof. Chandler derives a handsome income from this company, in addition to his various other incomes, we will not vouch for the fact. We will only say, that if we are correctly informed in this respect, the Professor's sense of honor, or sense of propriety, cannot be very nice. There is not one impartial, intelligent individual residing within the extensive territory of the Metropolitan Gas Company who would not bear testimony to its habitual overcharges. There are hundreds who can prove that its charges are frequently in an inverse ratio to the amount of gas burned or consumed. Several times we have had that experience in

our own case, and accordingly have paid the extortionate bills under protest. But there is no redress. Remonstrance is useless or worse. No other intelligent people on earth would submit for one year to the tyranny practised by this heartless, unprincipled monopoly. In a word, no one capable of reasoning would require any stronger evidence of the manner in which the Metropolitan Gas Light Company abuses the invaluable privileges conferred on it by the city than the character of the persons who pretend to examine the meters for it, and determine the amount of gas burned. The commonest grocery stores in the Bowery could hardly send forth a coarser, more ignorant, or more impudent gang as duns. If the servant fails to open the door instantly to admit these persons to the meter, she gets abuse; if her employer, happening to overhear the bad language, remonstrates with the person who uses it, he, too, is insulted, and the next bill exhibits a considerable increase on the former one.

The reader may now understand why it is that we have taken any notice of the accusations and recriminations indulged in by Prof. Chandler, and the Board of Managers of the American Institute against each other. That is, we know from observation and experience how badly the Board of Health has been managed during the past two years, and how grossly it has neglected its duties. We had similar knowledge of the *modus operandi* of the Metropolitan Gas Company. Having been assured that the Professor was as closely connected with the latter as with the former, and with several other concerns of less note, the controversy alluded to struck us as rather queer. As already remarked, we had never thought very highly of the scientific attainments of Prof. Chandler; but that was no reason why we should dislike the man, or take any pains to impress upon our readers that he was not the scientist he claimed to be. Accordingly, we never uttered one word against him in this or any other journal.

That we had no inclination whatever to do so will sufficiently appear from a fact or two. Some years ago*

* 1869.

we visited Columbia College; the Rev. Dr. Barnard politely and kindly introduced us to all the principal classes and their professors, affording us every facility to form an opinion of the work done. We were much pleased with the standard attained in Latin and Greek. We regarded it as a particular privilege to have heard Prof. Drisler's class translate in Homer and Euripides. We had expected much from this accomplished Grecian, and certainly were not disappointed. After we had heard several classes, President Barnard proposed that we accompany him to the School of Mines, and we availed ourselves of the honor. We then heard Prof. Chandler for the first, and probably the last time. A miserable excuse for a lecture on "science," such as a boy of fifteen at a respectable polytechnic school might blush for. Yet, in writing and publishing an elaborate article on what we saw and heard at the College, we find no fault whatever with Prof. Chandler.* So much did we see that was really good, we could not permit ourselves to mar the pleasure we derived from it; hence not a criticism was made by us on Prof. Chandler from that day to this. Let none think, then, that we have now turned to the performances of that gentleman through any pique against Columbia, for we certainly entertain no such feeling. We only regret—assuming it to be true, that there is so much "analyzing" of a particular kind going on, outside—that the name of the college should be dragged into it all, and that a large portion of the public should be led to think that the School of Mines must have been established chiefly for the benefit and glorification of the "Dean of the Faculty."

All in the habit of glancing at treatises on chemistry are aware that the reader is frequently informed that articles used in commerce are not pure. Thus, for example, we are informed that "the hydrochloric acid found in commerce is a liquid, but a simple experiment will show that this *liquid* is the solution of a *gas* in water." Now, we hope we shall be

* See N. Q. R., No. XXXVI. *Art. Columbia College.*

excused if we confess that, when we saw the interesting correspondence on the *Metaline* business, in the newspapers, we could not help asking ourselves whether that of Prof. Chandler might not be regarded as "the *science* found in commerce;" that is, an article slightly adulterated.

The correspondence is far too voluminous for our pages; the best we can do is to present our readers some passages from each side, italicising such remarks as seem to us most significant. Of course, Prof. Chandler's missive denouncing the American Institute, for having given a silver medal instead of a gold one to the exhibitors of metaline, is headed "School of Mines, Columbia College." The gentleman is evidently overflowing with virtuous indignation. We make room for the following brief extract, which, we think, may be said to speak for itself, so far as disinterestedness (?) is concerned:

"Here is an invention which claims to do away with lubricators on all kinds of machinery, from cotton spindles to locomotive crank bearings, which, if its claims be sustained, *will save enormous sums now paid for lubricators*, besides *avoiding all the danger and losses* which result from hot journals and from the free use of oil. *Competent judges pronounce the claims well founded;* the facts are available to every member of the Institute; letters from *the most reliable and well-known manufacturers* in New York and its vicinity were before the two Boards."

The righteous communication of the Professor concludes as follows:

"I consider the whole affair to be a conspiracy, very adroitly executed by a few of the managing men in the Institute, *to belittle this rival invention*, and I cannot countenance it by remaining longer a Director of the American Institute."

Those "lubricators" are, no doubt, well worth fighting about. The metaline surpasses all other lubricators; therefore the Professor gives in his resignation as director, because, inasmuch as the American Institute declines to award the gold medal, presenting only the silver medal to the exhibitors of the great lubricator, it is evident that the members of the Board of Directors and Managers have entered into a conspiracy with each other against that priceless article!

The Board, in their reply, make some stubborn statements;

although they evince much more courtesy, and more regard for the amenities of life, in defending themselves than the Professor does in accusing them of dishonesty and conspiracy. The following passage is significant:

"Previous to and after the judges' report was received by the Board of Managers, *an influence was brought to bear upon the Managers, individually, in favor of this award, such as was never before attempted* in the history of the Institute, so far as we are aware. *You failed to convince* the Board of Managers that the 'Great Medal' should be awarded, but by *persistent personal effort on the part of yourself and the company*, and the great respect in which you were held by the Managers, that Board was induced to recommend, by barely the number of votes needed, that the 'Medal of Progress' be awarded, and the report of the judges, together with the recommendation, was placed before the 'Board of Direction,' of which you were a member."

A little further on they say:

"The metaline was one of the three cases, and you *made an appeal to this Board to make an exception in favor of this article*, bringing *forward a large package of letters and certificates*, which, you claimed, covered the defects in the judges' report. You stated that you were *taking a special interest in this award*, because the company was represented by a personal friend *whom you desired to serve.*"

This is rather suggestive of the "science found," like hydrochloric acid, "in commerce." But a little more nitric acid:

"As there were but nine members present at that meeting, of course it would require a unanimous vote. One of the members, in his sympathy for you *in the equivocal position in which you placed yourself by your over zeal in behalf of the company*, suggested that, even if the papers were complete, you would hardly want them acted upon at that meeting, because it would require the vote of every member present, and from that suggestion you did not dissent."

The Board take leave of the "Dean of the Faculty" in truly Parthian style, for they give their severest thrusts in retiring:

"You raise the question of injustice, so often charged against the Institute *by those who are disappointed in the award of the medals*, forgetting that the American Institute is bound to protect the public as well as the exhibitors. You are not alone in raising that question: *a host of disappointed exhibitors*, with their friends within and without the member-

ship, has appeared after every exhibition during the past forty years, and *statements, wide of the truth*, have often appeared in the public press; but the management has never noticed them, and time has in every instance vindicated, *as it will in this instance vindicate*, the action of the Institute. Your term of office would expire *in thirteen days*, but your resignation has been *unanimously accepted*. This letter was unanimously adopted at a regular meeting of the Board of Direction."

It seems that neither directors nor managers of the American Institute have any salary. Then, if a director does his best to serve a friend—not, of course, to serve himself!—and fails in the attempt, is he justified, on scientific principles, in resigning?

But the judge, who thought that a silver medal was quite enough for the metaline, has also something to say on the subject. Replying in the morning papers to the accusations of Prof. Chandler, he proceeds thus:

"These charges have no foundation except, perhaps, in the imagination of the Professor, in his variety of self-imposed duties as Professor in the School of Mines and as examining chemist of several gas companies; and it is fair to notice here that the consumers of gas *have not perceived any improvement in its quality since Prof. Chandler received the above appointment.*

"This gentleman is also President of the Board of Health, the management of which is not highly satisfactory, as the sanitary condition of the city shows the *prevalence of small-pox, diphtheria, and other contagious and infectious diseases.*

"Now, is it fair, or not, to presume that a man of *so many duties* and *business connections* may have an *axe to grind* in championing the American Metaline Company? for *he*, and *not it*, is guilty of making the charges alluded to, and in attacking the well-known business-men and honorable gentlemen composing the Boards of Direction and Management."

What sort of acid this contains we will not undertake to say, except it be the sulphuric, which, we are told, "chars most *vegetable* and *animal* substances." But let us hear the accused judge:

"Professor Chandler also makes a charge against your humble servant, I being one of the judges on the merits of metaline, and not a member of either of the aforesaid boards, and that my report 'exhibited ignorance, incompetency, and unfairness.' Now, who would have surmised that the immaculate Professor Chandler could have descended

to this? As to his charge of ignorance, I leave that to be answered by my professional associations and those who know me best. I can solemnly aver that I have not been a party to any conspiracy. This charge is as false as it is malicious, etc."

The gentleman thus charged with ignorance, etc., is a practising physician, and, if we are correctly informed, one who, altogether independently of his acknowledged professional qualifications, is the reverse of being ignorant. But we make room for one more extract. The physician administers a final dose to the scientist, as follows:

"He also charges in his letter—first, that one of the members of the Board of Direction had committed himself as against metaline from the commencement; next, that two members, and finally, that all the officers of the American Institute were engaged in a conspiracy against the Metaline Company. The only conspiracy I can detect is *that between Professor Chandler and the American Metaline Company*, who, failing to get the highest award from the American Institute—for it could not be purchased—will, in lieu of a gold medal, *probably pay Professor Chandler for his labors and public testimonials as a chemist, as other companies may have done before.*"

We have already remarked that, had Professor Chandler properly attended, in our opinion, to his duties as President of the Board of Health, and not seemed to evince an undue amount of greed in his relations with some gas companies and certain other corporations, we would have taken no notice of the above controversy. But, with the too vivid recollection we had of the various poisonous nuisances which were allowed to accumulate during last summer and spring, and the summer and fall of 1873, and the knowledge we had from observation and experience of the consequences of those nuisances; bearing also in mind how utterly useless it was, in nine cases out of ten, to make any application to the President of the Board of Health for the removal of those nuisances—we could not help thinking, even without taking into account the gas business, that it was not for nothing our great scientist took so warm an interest in the metaline affair. It is true that we may be entirely wrong in the conclusion we have arrived at; but we believe that no impartial man can examine

the facts as carefully as we have done, without giving a verdict which, to say the least, would not be creditable either to the President of the Board of Health, the Dean of the Faculty of the School of Mines, or the ex-Director of the American Institute.

It was not until we had nearly concluded our researches in the metaline business, that we became aware that a small monthly publication, entitled "The American Chemist," issued for three or four years in Philadelphia by a book-seller, chiefly, if not exclusively, as a means of advertising his books, was translated to New York, by Prof. Chandler, soon after his appointment to the presidency of the Board of Health. We are assured that the Philadelphia publisher was very glad to get rid of it, because, though always in a moribund condition, he did not wish to see it die in his hands. It seems it has been issued since last July in this city, although it has utterly failed us to procure, for love or money, more than two copies of the New York issue—those for July, 1874 and January, 1875. The new prospectus is abundantly high-sounding —it informs the world that the work is "edited by Charles F. Chandler, Ph. D., Professor of Analytical and Applied Chemistry in the School of Mines, Columbia College, New York, and by William H. Chandler, Ph. D., F. C. S., Professor of Chemistry in The Lehigh University, Bethlehem, Pa., Assisted by," etc. [at least a score of great scientists]. The "Notice to subscribers" is still more magnificent, if possible; and at the bottom of it stands, *ex more*, "School of Mines, Columbia College."

Old Columbia may well be proud, if only for finding herself in such close relations with so famous an institution as The Lehigh University—one which has scarcely a parallel, as a burlesque, this side of the Sandwich Islands. The leading article in the first New York number consists of an "Address," delivered at The Lehigh University in June last, and fills six pages (twelve columns), about one-fifth of the whole thing. Another Address, delivered *nearly a year* previously (October, 1873), before the American Public Health Association, fills

nearly *nine* pages (eighteen columns) in the same number. All the original matter—if such it can be called—we can find is, "Contributions from the Laboratory of the Illinois Industrial University." The rest, which is not much, is composed of "Chemical Notes from Foreign and American Journals." Still more is devoted to "addresses" in the January number—one delivered, we know not how long ago, by M. Wurtz, and extending to nearly fifteen columns, the other delivered by Mr. John Pattinson in October, 1874, and extending to sixteen columns, etc. In a word, we exaggerate nothing when we say that, if what is borrowed, stolen, or spoiled in being appropriated; were omitted, there would not remain five cents' worth of "the science of commerce" in either of the numbers before us. Evidently one of the principal objects of the work, under its present auspices, is to glorify the great scientists of The Lehigh University and the School of Mines, Columbia College, by printing, *in extenso*, their stale platitudes on "science."

It is not for all this, however, that we have invited the attention of our readers to "The American Chemist." We hold that the learned editors and publishers have a perfect right to fill their pages even with the dullest and most tiresome "addresses" on exploded theories. The only reason why we have said one word about "The American Chemist" is this: The first page of one of the two numbers before us—that for January, 1875—is occupied by a flaming advertisement announcing to the world "GRAND SILVER MEDAL AT THE AMERICAN INSTITUTE FAIR, OF 1874. SAN ANTONIO LIEBIG'S MEAT EXTRACT, MANUFACTURED BY THE SAN ANTONIO MEAT EXTRACT FACTORY. ANALYSIS BY PROF. C. F. CHANDLER AND F. A. CAIRNS, A.M., OF COLUMBIA COLLEGE." Here follows a long elaborate "analysis" exhibiting the numerous ingredients which are claimed to enter into the composition of that precious and invaluable article. There is no substance supposed to be good for the human stomach—for muscle, bone, cartilage, etc., etc.—which the Dean of the Faculty and his assistant have not discovered in this wonderful extract.

Yet, were we in the habit of making wagers, we would venture to offer one, that this analysis is as far from the truth as the Professor's famous "official analysis" of the milk sold in New York; although we are not aware that we have ever seen any specimen of "The San Antonio Meat Extract." But it is only necessary to compare the numerous ingredients with each other in order to see that there has been sad bungling.

We have remarked above that, in the estimation of a certain class of "scientists," there is scarcely a disease that occurs which may not be traced directly or indirectly to "deficiency of oxygen." To this observation we added that oxygen, in one form or another, is the most abundant element in nature. But in Prof. Chandler's elaborate analysis of the Meat Extract, it is entirely ignored, except as it is found in phosphoric acid and *sulphuric* acid! But what are the principal constituents of the best "meat?" Are they not fibrin, albumen, and gelatin? Then, according to Gay-Lussac and Thenard, in every 100 parts of fibrin, there are 19.685 of oxygen; in albumen, there are 26.67 parts of oxygen, according to Prout; in gelatin, there are, according to Gay-Lussac, 27.207 of oxygen, etc.

The question for the public, however, is not, whether Prof. Chandler is right or wrong in his analysis of meat, milk, soup, sausage, cabbage, or any thing else he operates upon. We hold it to be of much greater importance to determine whether the new series of "The American Chemist" is to be regarded as a sort of dripping-pan for wonderful "extracts."

Be this as it may, we confess we have a strong suspicion that, had the gold medal been awarded for the metaline, the unrivalled lubricating qualities of that article would have been set forth at length in "The American Chemist." Even, as it is, the President of the Board of Health, the Dean of the Faculty, the purifier of our gas-light, etc., etc., has well earned the additional perquisite for the indomitable valor he has evinced as the champion of the great lubricator.

At all events, we feel that we have done our duty; we feel pretty much as we did when, at the zenith of his power,

we portrayed in the same pages the Hon. Peter B. Sweeny; or as we felt when, subsequently, we portrayed the Hon. Andrew H. Green at the very outset of his career as Comptroller. Some may say that our present sketch has some flaws in it; but we make no claim to perfection. If we have succeeded in showing that some of our New York scientists make remarkable discoveries, we are willing to leave the rest to Time, fully satisfied that it will prove the justness and accuracy of our views just as it has already done in the case of each of the two great patriots and benefactors of their race just mentioned.

ART. IV.—1. *The Writings of Thomas Jefferson, being his Autobiography, Correspondence, Reports, Messages, Addresses, and other Writings, official and private, etc.* Published by the order of the Joint Committee of Congress on the Library. 9 vols., 8vo.

2. *The Life of Thomas Jefferson.* By HENRY S. RANDALL, LL. D. 3 vols. Philadelphia. 1865.

3. *The Life of Thomas Jefferson, Third President of the United States, with parts of his Correspondence never before published, etc.* By GEORGE TUCKER. 2 vols., 8vo. 1837.

4. *Life of Thomas Jefferson, Third President of the United States.* By JAMES PARTON. 1 vol., 8vo. Boston. 1874.

JEFFERSON was one of the founders of the Republic, though he did not co-operate with those who organized our Federal Government, as he was at that time minister to France, and only returned to become secretary of state in the administration of Washington. He was the author of the Declaration of Independence, and, if not the founder, at least he was the great leader of the Republican party that grew up in opposition to the administrations of Washington and Adams.

In considering the position he thus held and the events with

which his name is connected, we must assign him a place of the first magnitude among American statesmen, and among the presidents of the United States. He cannot stand beside Franklin, Washington, and John Jay, for purity and disinterestedness of character, or above Henry Mason, George Clinton, or Samuel Adams, as a friend of the people, or as a lover of democratic government. He cannot be placed above many others of his contemporaries for distinguished services to his country. He never had the organizing foresight of Hamilton or Madison; yet he was one of the foremost leaders of a party; he was a scholar, a scientist, a devoted patriot and philanthropist. Thus he takes rank among the Jays, the Adamses, and the Pinckneys of the revolutionary period, and has influenced the destinies of his country during its whole existence. After Washington and Franklin, he has shared this influence with John Adams, Hamilton, Madison, and Jay.

As a party leader he was eminently successful, and yet no statesman of that age was more open in the avowal of his opinions. Such being his potency in American politics, it becomes us to inquire on what foundation his fame now rests, and what gave him his eminence. Jefferson was no orator, and scarcely ever addressed public bodies. He was a public character and a public writer only; and his writings were very meagre, except his letters on public affairs. He was a leader by the force of his character and intelligence. He got his fame by these qualities and by fortunate circumstances that first gave him prominence as the author of the Declaration at the age of 33. He wrote the finest state paper of the Revolution, and the one that asserted our rights to exist as a nation; and so his name became indissolubly connected with that great event, as well as forever associated with those who composed that Congress of patriots. Jefferson has largely influenced our politics in the past, and will do so in the future. Like Hamilton, his fame was largely partizan since the establishment of the Constitution, and it is therefore difficult to estimate his real virtues as a man and a statesman.

That age of intense earnestness and hatred, as well as party prejudice and honest difference, is buried; and, if we have not yet reached a clear sky, the clouds have broken away and we live under a more steady light. Then social intercourse became quite extinct between opposing parties under the baneful influence of the French Revolution, and those asperities remained with us for a long time, and divided the young republic, and envenomed our party contests as it did those of England. Jefferson returned from France as the friend of reform, and as a mark of his sympathy he wore the French red vest and breeches. Those not so marked in their sympathy for France were disposed to make light of this exhibition of dress on the part of Jefferson, and thought it not quite the thing for a secretary of state of the United States. But Fox and many whigs in the house of commons, in like manner, put on buff and blue to show their sympathy for America in 1796; and while we admire the one act we can excuse the other.

So, in Jefferson, we have an honest character, and one that was deeply earnest in all his purposes. He was brave in revolution, decided in peace, and courageous as a public man. In some degree he combines the philosopher with the man of action. In his own time, he was derided by his opponents as "the philosopher," as a disparagement, while Hamilton was called the projector and the exotic. Satire sometimes discovers the actual qualities only to exaggerate or disparage them; and hence we can learn truth from satire itself. Jefferson exhibited strong tastes and aptitudes for philosophy, and with opportunity he would have achieved some great work. His *Notes on Virginia* show what aptitude he had in research, and we read this work with deep interest, even at the present day. He corrected many errors of Buffon in natural history, and always pursued those studies with seeming delight. He had no fears of investigation, and calmly weighed all evidence, except in politics, where he was an uncompromising republican. Here all was to be judged by one sole test; was it a government by the people? for the form and substance were with him material and essential. Thus

his life and character are to be considered and analyzed, and his influence upon his country determined. Since men have hitherto disagreed as to these, we enter upon a difficult if not a delicate task.

Jefferson was fortunate in his public life. He appeared at the opportune juncture to draft the Declaration. He with John Adams and Dr. Franklin negotiated and signed the treaty of peace with Great Britain; he became governor of Virginia, secretary of state, vice-president and third president of the United States. All these with many subordinate places he filled with marked ability and honor. He was not without faults, and he sometimes erred in administration, but he was honest, frugal, and faithful in all his offices; for it was an age of poverty, and we then had all the virtues of the best age of Rome. There was then no rapacity, no demoralization in the administration of the federal and state governments; that came in a later age when integrity had diminished in public life as the state had grown rich and corrupt. So in the early history of our government there is found strict integrity and honor among public men, however much we may find to censure in them as public characters or as partizans. Jefferson held office to the detriment of his private fortune, and Hamilton was in need while secretary of the treasury, and retired to his profession to gain an independence. So integrity was then a virtue confined to no party, and these leaders were conspicuous examples of nearly every public virtue in statesmanship. Thus in portraying Mr. Jefferson we are dealing with an honest and high-toned public man. His faults were mainly those of his age, and his virtues were his own.

Jefferson was graduated at William and Mary College, after two years' study. He was said to be well educated for that time, and received the first honors of his *alma mater;* and Mr. Wirtley said that he came to the bar with a large and exceptional knowledge, having studied law with no less a jurist than George Wythe, afterward chancellor of Virginia. Suffice it that these preparatory studies soon gave Jefferson a respectable standing in his profession as a sound lawyer, and

his family influence soon gave him a fair income as a practitioner; yet, having a large estate to engage his attention, and being very soon drawn to public affairs by the Revolution, he gave up his profession at the end of about six years never to resume it. He had taken high rank as a lawyer, even in this short period, and this gave him weight as a new and rising politician. He served for a time in the Virginia legislature, where he first met Washington, and was finally selected as one of the Virginia delegates to the Continental Congress where he was soon recognized as an accomplished writer. He came at the proper juncture for his own fame, though he had been preceded by such writers as John Jay, John Dickinson, and Richard Henry Lee.

He took his seat in the second Congress the 21st day of June, 1775, to supply the place of Peyton Randolph, whose health caused him to withdraw from the chair as the first president of that Congress, and thereby John Hancock, his successor, became illustrious by his signature to the Declaration. Jefferson's summary view of the rights of British America, his paper of instructions to the Virginia delegates in 1774, had preceded him, and he had written the answer of Virginia to Lord North's conciliatory proposition which he brought with him; and thus, as John Adams says, he brought with him a reputation for literature, science, and a happy talent for composition. Adams says of him: "Though a quiet member in Congress, he was so prompt, frank, explicit, and decisive upon committees, and in conversation—not even Samuel Adams was more so—that Jefferson soon seized upon his heart."

Five days after he and Dickinson were added to a committee consisting of Lee, Gov. Livingston, and Jay, who were to prepare the second petition to the King of England, which Jefferson drew. It did not meet Dickinson's mind, and so he made the final report retaining but a little of Jefferson's draft. This was approved by the committee, and reported to and adopted by Congress. This last petition was entrusted to Richard Penn and Arthur Lee to present to the

king, and they soon wrote, and their letter was read in Congress that "no answer would be given" it.

On the 22d of July, Dr. Franklin, Jefferson, John Adams, and R. H. Lee were appointed a committee to consider and report on Lord North's conciliatory resolution. The answer of the Virginia assembly having been approved, Jefferson was requested by the committee to prepare this report, which, he says, accounts for the similarity of the two instruments. On the 15th of May, 1776, the convention of Virginia, that had assembled to make a state constitution, instructed the Virginia delegates, in Congress, to propose to that body to declare the colonies independent of Great Britain, and appointed a committee to propose a declaration of rights and plan of State Government. Both were immediately carried. In pursuance of these instructions, on the 1st of June, 1776, Richard Henry Lee proposed a resolution of Independence, and on the 8th Congress took it into consideration and referred it to a committee of the whole, and debated it on that day and Monday the 10th of June. It was opposed by Wilson, Robert R. Livingston, E. Rutledge, and John Dickinson. On the other side were John Adams, Richard Henry Lee, and George Wythe among the speakers. Congress had adopted a secret pledge not to divulge any thing of their proceedings on pain of

"being deemed an enemy to the liberties of America," and had sat with closed doors, so that this and the succeeding debates upon independence are wholly and irrecoverably lost, except we find in the writings of those men some jottings down of that great debate. Suffice it that, on the 29th of November, 1775, Congress had instructed their colonial agents that "there is nothing more ardently desired by North America than a lasting union with Great Britain on terms of just and equal liberty."

John Jay says that, during the course of his life, and until the second petition of Congress in 1775, he never heard any American of any class, or any description, express a wish for the independence of the colonies; and Jefferson in 1782, in his Notes on Virginia, said: "It is well known that, in July,

1775, a separation from Great Britain and an establishment of a republican government had never yet entered into any person's mind." The struggle began for redress of grievances, and Jefferson and John Adams went together hand in hand up to the Declaration. The king opened parliament denouncing "the colonies as rebels, seeking with deceitful pretences to establish an independent empire." Blind and infatuated king! England drove the colonies into rebellion, and gave them independence! Mankind never learns from the past that real grievances alone drive people into revolution, such as the colonies suffered and England had endured a century before.

The 11th of June Congress resolved to appoint a committee to draft a Declaration, to consist of five persons; and they were chosen in the usual way, by ballot, and stood in the following order:

Thomas Jefferson, John Adams, Benjamin Franklin, Roger Sherman, Robert R. Livingston.

Adams says that Jefferson had the highest vote, and that placed him first on the committee; besides, on this occasion, Adams did all in his power to procure the votes of others for Jefferson; and so Jefferson was again fortunate, that Lee, who had as the leader of the Virginia delegation moved the resolution of independence, and supported it with all his eloquence, had been suddenly called away to Virginia by the illness of his wife before the selection of this committee, and thus giving to Jefferson this place to draft the Declaration, and make his name a household word throughout two continents.

The committee unanimously pressed Jefferson to prepare the Declaration. He did so, and submitted it to Franklin and Adams, and requested their opinions, and they made several verbal corrections. The report was then laid before the committee, which made no amendments, and on the 28th of June it was presented to Congress by its author, around whom stood the great committee. Adams says, Jefferson and himself were appointed a sub-committee to prepare the Declara-

tion, and the fact that Jefferson first submitted it to Franklin and Adams for correction, corroborates this statement of Adams, though Jefferson wrote in 1823 that there was no sub-committee. These reminiscences were given to Pickering in 1822, when Adams was 86, and to Madison when Jefferson was 80. As Adams did not remember that he and Franklin made a single alteration, and Jefferson did not remember there was a sub-committee, we may suppose their remembrance of details not entirely correct. The fact of submitting the draft to Adams and Franklin would imply that they and Jefferson were a sub-committee, though Adams does not mention that Franklin was on such committee. Adams says, he reported it to the committee of five, and he did not remember that they corrected any thing. He says: "We were all in haste, Congress was impatient, and the instrument was reported to the house on Friday the 28th of June, and was ordered to lie on the table. On the 1st and 2d of July the resolution for independence was debated in committee of the whole, and on the 3d and 4th the Declaration was considered, and on the last day carried by the house, and signed by every member except John Dickinson. It was afterward engrossed on parchment, and re-signed on the 2d day of August for its better preservation; and thus the published Declaration does not appear in the handwriting of Thomas Jefferson.

Mr. Jefferson had lodgings on the south side of Market Street, between Seventh and Eighth Streets, in Philadelphia, and he thought it was a corner house in which he wrote the Declaration. There is remaining a little writing-desk on which he wrote that Declaration, yet it is strange that the paper signed on the 4th of July has utterly disappeared, and has never been accounted for.

Mr. Jefferson has said that John Adams was the colossus of the house in that debate, and that his great speech was in answer to Dickinson's first appeal on the 1st of July, just before the question was taken in the committee on the original resolution. Richard Henry Lee afterward charged that the Declaration was copied from Locke's Treatise on Government;

and John Adams wrote Pickering that it contained not an idea but had been hackneyed in Congress for two years before; that the substance could be found in the Declaration of Rights drawn by John Dickinson, and in the pamphlet of James Otis. Mr. Jefferson answered these charges whether the arguments for the Declaration had been hackneyed in Congress two years before the 4th of July '76, or the sentiments or the dress, let history say. "This, however," he adds, "I will say for Mr. Adams, that he supported the Declaration with zeal and ability, fighting fearlessly for every word of it."

Since that age it has been strenuously maintained by many writers that Jefferson appropriated this state paper from the Virginia bill of Rights and from the Mecklenburg Declaration of May, 1776. Jefferson lived to see his claims as the author of the Declaration sharply disputed, and he warmly met those charges of plagiarism just before his demise, for he said he had not so much as ever heard of the Mecklenburg Declaration; and while he was preparing this paper he never so much as referred to any other paper or book, though he could not say how much he may have got by former study and reflection that went to make up the Declaration of Independence. It is quite true that we can find nothing new in this state paper, for many of its general principles can be found in Locke, Vattel, and previous writers, and his careful study of these authors and the state papers of the first and second Congress enabled him to set forth in an able manner all the grievances of the American colonies. However, after considerable study of the history of the Declaration, we think there is nothing to deprive Mr. Jefferson of the epitaph prepared by himself for his own tombstone that he was the author of the Declaration of Independence.* As Jefferson was

* Those who wish to know the grounds of plagiarism preferred against Jefferson's authorship of the Declaration can find them in the articles by Dr. Hawks in the New York Review of 1837 and in Randall's Life. The Review puts parallel passages side by side showing the similarity to those in the Declaration. These were from Jay's address in

its author, Adams and Franklin were the advocate and philosopher of that great paper which can only perish with American liberty. This Declaration was in every way worthy to be the finality of those state papers which had elicited the praise of Chatham, and of that drawn by John Jay—the address to the people of Great Britain—which Jefferson characterized as a production certainly of the finest pen in America, and yet that paper is known only to antiquaries, while the Declaration is a household parchment or title-deed throughout the United States. Such is its importance that it is the Magna Charta of American liberty, and dwells in the American heart like the war-songs of the old bards, though it is now merely an historical document, and partakes largely of the glittering generalities which were ascribed to it by Choate. So Jefferson takes rank with John Somers,

1774, Mecklenburg Declaration of 1775, and more fully from the Virginia Declaration of Rights of May, 1776, drawn by George Mason.

Jefferson in his letters to John Adams denies having ever seen the North Carolina Declaration, and he says that, while he was engaged in preparing it, he never referred to any paper or document. Certainly Jefferson had some aberrations of memory as conceded by Randall in the Mazzei inculpation of Washington, and he might also have added his manifest error about the repeal of the Embargo, whereby in one letter at the time he accuses Story as a pseudo-Republican of producing the repeal, and in a subsequent letter years after he claims the credit of abandoning the measure himself.

While we think that the North Carolina Declaration was possibly unknown to Jefferson as it certainly was to John Adams, yet it is true that he had those other documents before him while Jefferson was engaged upon the draft of a Declaration of Independence. The nature of the two acts may have led to similitude of language, but the phraseology proves, we think, that Jefferson collated these documents and followed them in *many parts* of the Declaration. Still, allowing this phraseology as decidedly improved by his pen, and, as the Declaration was intended to merely recite the history of our grievances, it was not expected to widely depart from former state papers of Congress except that it now took an advance step and declared for separation and independence, and hence we have thought Jefferson is justly to be called its author, though he borrowed from the Declaration of George Mason and other state papers of a preceding Congress.

whose penetrating pen secured and immortalized the freedom of England in her Declaration of Right in 1688.

The Declaration did not escape the criticism of that Congress, and portions of it were eliminated, especially that which condemned Great Britain for imposing upon the colonies the foreign slave traffic against their consent. This was stricken out to appease Georgia and South Carolina as well as not unnecessarily to offend our friends in Great Britain; and after a long lapse of time we have seen England chiding America for a wrong that she placed upon these States at their foundation.

While this debate was in progress, and Jefferson saw the inroads making into his Declaration, Dr. Franklin consoled him by relating the famous story about the mutilation of the sign of a certain Philadelphia hatter, to the amusement of all who listened to his sly and salient humor.

The Declaration is a clear and succinct narrative of American grievances, and especially of the misgovernment of the king of England. So fearful and severe is this arraignment that it has been said to partake of an overstatement of the responsibility of George III., while it does not even mention the name of Parliament as causing any of those grievances, except by the king's assenting to certain pretended acts of legislation which the colonies wholly repudiated.

Mr. Webster has said, this power of parliament over the colonies "was precisely the point of the original controversy. They had uniformly denied that parliament had authority to make laws for them. There was, therefore, no subjection to parliament to be thrown off. But allegiance to the king did exist, and had been uniformly acknowledged, and down to 1775 the most solemn assurances had been given that it was not intended to throw off that allegiance."

The address drawn by John Jay, September 5, 1774, said, "no power on earth has the right to take our property from us without our consent," and it further said, "we claim all the benefits secured to the subjects by the English Constitution."

It was asserted to be a principle of that constitution, that representation and taxation go together. But Lord Mansfield claimed the right to tax America on the ground that she was virtually represented in the parliament, as the people of England were but partially represented. He further endeavored to show that there was no distinction as to internal and external taxation, for a stone dropped into any part of a body of water would stir the whole body to its centre.

It is evident that the Declaration was drawn to meet the views of the colonists and that age of revolution; and it is necessarily severe upon the king, for the reason that they charged him with all colonial grievances and the misgovernment of the country; yet it was parliament which had passed and finally repealed most of the acts by which they sought to tax these colonies. It was parliament which annulled the charter of Massachusetts Bay, dissolved the legislature of New York, and passed the Boston post bill, and enacted the non-intercourse act which interdicted commerce and trade with foreign nations except through British channels. These navigation acts had been acquiesced in by the colonies for upward of a century, and there was an incidental tax thus imposed. In this view, George III. said to Lord North, his favorite minister, that parliament should sustain him, as he was fighting their battle with the colonies.

This question is historical, and we think the whigs of that age were strict constructionists of the rights of parliament, and the asserters of monarchical power at the expense of legislative authority. To assert that power was vested in the king and local government was an absurdity; for, since the Revolution of 1688, the king is subordinate to parliament in all matters relating to colonial and internal government of the British Empire. To assert that the allegiance of the colonies was owing alone to a British king, is a part of the same absurdity that parliament had no authority over the colonies. Allegiance was owing here, as in Great Britain, to the British government, and not to the king. We repudiate this claim, and think Mr. Webster and Jefferson

wrong in maintaining the principle that the colonies had no political tie to cast off but that which connected us to the throne, and we think the colonies never had asserted that until they were finally driven to assert it as a revolutionary measure. When we say this, we do not affirm the principle asserted by parliament, that they could bind the colonies in all cases whatsoever, for the colonies held certain indefeasible charter rights which never could be repealed by acts of parliament. Suffice it to say that the British colonies, by the very force of the term, were dependencies upon the mother country, and not upon the king alone, and necessarily subject to her constitutional control the same as any part of the British Empire, and nothing but a long course of arbitrary rule by the mother country caused our fathers to declare their grievances and set up for independence. The contest was fifteen years of constitutional resistance, and then came revolution. It was nothing less than revolution, and is to be justified as a brave resistance to misgovernment and arbitrary power.

But Burke urged that parliament was not wont in other times to tax the colonies, and he argued against the policy of this individual tax. He placed this on the ground of long and continuous usage; and yet parliament asserted the right to bind the colonies in all cases whatsoever by a *declaratory act* whereby it had repealed all taxes except on one or two articles. And Mr. Webster asserted, upon a memorable occasion, that we went to war upon this preamble of a parliamentary declaration.

Indeed, it may be assumed that it was a contest that arose in a great degree by this dispute about the supremacy of parliament, and yet it is probable there would have been no revolution without actual grievances, as enumerated and set forth in the Declaration. The committee to draft the revolution performed their office in setting out the causes that led the colonies to throw off their allegiance and set up another form of government for themselves. But Jefferson had long held that parliament could not bind the "colonies under any

circumstances, and that they were wholly independent of parliament to enact their own laws."

Mr. Jefferson soon after returned to the Virginia Legislature, and continued there and in the revolutionary Congress until he was finally sent abroad, in 1782, as a minister to negotiate the treaty of peace, in connection with Dr. Franklin and John Adams. In 1784 he was appointed minister to France to succeed Dr. Franklin, who had served his country so ably abroad since independence was declared. When he assumed the office, Count de Vergennes, the French minister, said to him: "You replace Dr. Franklin, I hear." To which he promptly replied: "I succeed; no one can replace him." Jefferson was well received at court, and soon became a great favorite in France. He had renewed his friendship since 1782 with those gallant officers who had fought for America, and now interested himself in the reform movements that began to be agitated there, and which led to the assembling of the States-general, and the national assembly that precipitated the revolution of 1789. Mr. Jefferson had published, at Paris, in 1782, his Notes on Virginia, which added to his repute as an American writer; and his fine conversational powers and large knowledge made him an acquisition in the literary and scientific circles of the French capital. He was intimate with the encyclopædists, and the circle of Buffon, and Lavoisier, the great chemist.

When these new reforms were inaugurated in France they issued a Declaration of Rights and prepared a constitution founded upon the principle of a limited monarchy, and Jefferson was much consulted in these affairs, and he remarks in his autobiography that the king became a passive machine of the National Assembly, and had he been left to himself he would have acquiesced in whatsoever they should have advised as best for the nation. A wise constitution would have been formed, hereditary in his line, himself placed at its head with powers so large as to enable him to do all the good of his station, and so limited as to prevent abuse. Jefferson further

adds, that such a constitution he would have faithfully administered; and more than this, says Jefferson, he does not believe he ever wished. This opinion was given in that autobiography of 1821, when all the excitements of the French Revolution had died away. Thus we see that our American democrat, at this time, regrets that such a constitution had not been established as would have saved France from the throes of revolution that shook her for a quarter of a century only to return again to monarchy. During these preliminary discussions upon the project of a constitution, La Fayette informed Jefferson that he should bring six or eight friends to dinner, and being assured of a welcome they arrived and sat at dinner the next day. His companions were Dupont, Barnave, Alex. la Moth, Blacon, Monnior, Maubourg, and Dagout. These were the leading patriots who sought to reconcile the extremes of their constitution to save France.

With this view La Fayette had invited this conference under the roof and at the table of the American minister. The cloth being removed, and wine set on the table, after the American manner, the marquis introduced the objects of the conference by summarily reminding them of the state of things in the assembly, the course of the constitution, and the inevitable result unless checked by concord among the patriots themselves. La Fayette observed that he was ready to sacrifice his own opinions to that of his brethren in the same cause, and that they must come to one accord or that the aristocracy would carry every thing, and that whatsoever they should agree upon he, at the head of the National Guards, would maintain.

The discussions began at the hour of four, and continued until ten in the evening, during which Jefferson relates that he was a silent witness to a coolness and candor of argument unusual during the conflicts of political opinion, to a logical reasoning, chaste eloquence truly worthy of being placed in parallel with the finest dialogues of antiquity as handed down by Plato, Xenophon, and Cicero. The result was, the king should have a suspensive veto, the legislature should be com-

posed of a single body, and that chosen by the people. Mr. Jefferson sent a note to the foreign minister apologizing for this assemblage, but it was known and approved by that functionary, who favored reasonable reform. Thus brought into confidential relations with the court and the patriots, Jefferson had great facilities to comprehend the counter-currents in French affairs. He said the queen bore absolute sway over the king's weak mind and timid virtue. This angel, as painted in the speeches of Burke, with some smartness of fancy but no sound sense, was proud, disdainful of restraint, indignant at all obstacles to her will, eager in the pursuit of pleasure, and firm enough to adhere to her desires or perish in the wreck. He also adds that he had ever believed if there had been no queen there would have been no revolution in France.

Jefferson returned to America in the first year in the great cycle of reform in France, and never doubted that within the ensuing year we should see the "certain and happy termination of the struggle for liberty." The interest he took in this event was deep as it was intimately connected with American independence. His foresight was not so clear as that of Gouverneur Morris who foresaw that it would end in excesses that would imperil the rights of men, and because of this he did not fall in with the revolutionary men of that time. Indeed, Jefferson did not favor a republican government, and urged them to follow nearer the English constitution than our own. This was undoubtedly wise, and, had not Louis XVI. been imperilled by foreign war as well as by internal conflagration, he would have remained king and saved France. Jefferson did not carry his democratic principles to such an extreme as to impose necessarily the democratic form of government upon all nations. Notwithstanding this opinion as to the true way for France, he desired to see the reform of all abuse and the complete restoration of the rights of man to this brave and generous people, though he endeavored to keep aloof from French affairs. He thought the condition of the people of Europe really deplorable, and he said it had come from arbitrary government, and he sympathized with the move

to bring them up to true liberty, such as they did not possess or comprehend. He thought America was far in advance of every other people in free government, and he always supported every security to human liberty in his own country. He erred in too easily believing that many of his contemporaries were monarchists because they were not so sanguine in the workings of republican government as himself; and this chiding of his peers in foresight and uprightness mars his confidential correspondence and his *ana*, to such an extent as leads one to think he was thereby unjust and altogether wrong in his accusations against Adams and Hamilton.

There is a grave fault in the character of Jefferson that makes him assail his political adversaries upon nearly all occasions. Indeed, this is discovered in almost all his letters to his followers, and illustrated by the celebrated letter to his Italian friend, Mazie, wherein he assails very unhandsomely the administration of Washington at a time while he was still acting as the chief officer of his cabinet; and his final explanation nearly assures that he was capable of duplicity. Again, this fault is seen in his disparagement of Aaron Burr, after their contest of 1800 had embittered Jefferson against him. There is nothing in Burr's conduct so unjust and contradictory as that of Jefferson himself. Burr so far from intriguing for the presidency at that memorable time would not even give an encouraging word to Bayard and the Federalists who had it in their power to have made him president in the place of Jefferson; and thereafter all the administration organs gratified Jefferson by decrying and defaming Aaron Burr who alone had turned the election in New York in favor of the republican cause, and thus saved the party from defeat. But now Jefferson thought it quite right to destroy Burr, and charged him with all kinds of bad conduct, and thus Burr was unjustly defamed by those he had elevated to power, to such an extent, that he retired from the vice-presidency in March, 1805, a ruined man. Much of this he owed to his own partisans, though the duel with Hamilton had deepened the popular odium that surrounded him. This feeling prompted

Jefferson to pursue Burr as a traitor to his country two years later, when in truth there was nothing more than a filibustering scheme on which Burr sought to eventually retrieve his fallen fortunes. No one can suppose that Burr meant to break up the Union, or even produce a civil war this side of the Mexican soil. But Jefferson conceived the worst fancies, and exerted his power as president to arraign him for high treason, and the accusation was dismissed by the Chief Justice of the United States, John Marshall. This fault arose from the sincere partisan character of Jefferson. He was a warm friend and a decided hater. He was enthusiastic, sincere, and denunciatory in politics. He was thus a great revolutionary character, never flinching in the measures necessary to success or victory.

Mr. Jefferson was in fact a reformer, and in this respect took the lead in Virginia in bringing about needful improvement in the laws of that great State. He cut up by the roots the relics of feudalism, and caused primogeniture and the laws of entails to pass away. He struck down church and state, and gave freedom to religion, as it existed in the other great States at that period. He sought to emancipate the slaves gradually, and did secure the master this right for the state of Virginia, to do this. He raised an obelisk of granite on which was to be the following incription: "Here was buried Thomas Jefferson, author of the Declaration of American Independence, the Statute of Virginia of Religious Freedom, and Father of the University of Virginia." Thus we see that he cherished his reforms among the great acts of his eventful life, and worthy to perpetuate his memory in other ages. Certainly he judged well, for these acts show that he was at heart a true and great reformer and educator. The disestablishment of church and state in Virginia was the work of Jefferson, though the Dissenters had prepared the way for religious freedom in that State. Indeed, it is true that Virginia needed these reformatory measures to accompany the law reforms as to

the tenure of property to which Jefferson, Mason, and Wythe contributed their joint labors, and of which Jefferson always had the lead. He believed earnestly in certain free principles which existed in other states, and which he proposed to incorporate into the laws of Virginia. He pursued these reforms to such an extent as to propose gradual emancipation in Virginia, and ultimate prohibition of slavery in all the territories of the United States after the year 1800; but that ordinance was defeated, and that of 1787 permitted slavery south of the river Ohio, and prohibited to the north of that river. This principle was extended in 1820 on the line of 36° 3′, and became known thereafter as the Missouri Compromise. At this juncture Mr. Jefferson took decided grounds against this measure. He thought it better to diffuse slavery over a wide expanse of country than to contract and proscribe it to certain limits, and this reason was based on the good of the slave as well as the master himself. Indeed, Mr. Jefferson thought this line of demarkation between freedom and slavery dangerous to the country, and to the union of the States. Certainly, his letters at this period show how clear was his vision on the slave question, and he thought the North had struck upon a principle of Southern exclusion and restriction that would in the end imperil the Union. One can hardly peruse his writings at this period without confessing that his forebodings were well considered and deeply reflective of great and comprehensive statesmanship, and censuring the North for forcing the South into that compromise.

Mr. Jefferson had early and always regarded slavery as an evil in morals and in politics, and he never for a moment could allow that such an institution could be justified under any form of religion or of morals. Here he exhibited his integrity in the "inherent rights of man," as he had inscribed in the Declaration of Independence; and, while he always stood by this principle of manhood, still he always held slaves with the South, and never emancipated but two at his death. He seemed to think in later years that it was impossible to set

them all free, and yet, as he said in his Notes on Virginia, "he trembled for his country when he reflected that God was just."

Again, his religious views that were so severely criticised in 1800, in the light of seventy-five years later knowledge, appear quite moderate compared with the most advanced opinions of this age. Mr. Jefferson's works show that he professed the views of the Unitarians, of Priestley, and of Dr. Price of England, and accorded very nearly to those of John Adams, his great rival and contemporary. Mr. Jefferson, while he was educated in and attended the Episcopal church, and freely contributed to its support, always was, in later years, a free-thinker, and held it a religious duty never to proselyte in religion; so much so, that his own children were quite uninformed as to the extent of his skeptical views. He taught them to reason and think for themselves uninfluenced by his views. Thus he held it to be the duty of each human being to search out the truth for himself; and that no one could stand between man and God.

Mr. Jefferson carried into the administration of the government, as the third president of the United States, the solid qualities of integrity, honesty, and economy. He did not have so difficult a part as Washington to perform, for he inaugurated those great measures of Hamilton which placed the nation on a successful and solid basis, even during the first twenty years of the federal government, and whose great measures were reaffirmed by the republicans under Madison, in 1816, under the splendid and able statesmanship of Clay, Calhoun, Chever, and John Quincy Adams; and the tariff and currency policy of the Washington administration was continued about as many years longer, as the United States Bank was again rechartered for twenty years more, but was strangled under Jackson before this term had expired. Thus, while these measures remained in full force under Jefferson, the credit of them belonged to the great first secretary of the treasury under the federal government, and not to him. Indeed, against their adoption he had lent all his influence, because

he disapproved of them, thus proving Jefferson not so far-seeing as Hamilton, who originated, and Washington, who fully approved them after a full discussion by the Cabinet in the manner established by him of calling upon them for their written opinions, and upon the merits of which he deliberately decided, and thus adopted his policy on all leading questions of administration.

Mr. Jefferson did not exhibit as calm and clear a judgment in practical government as Hamilton, and hence we see his change of some of his opinions in later years. In his Notes on Virginia he thought the commercial and manufacturing interests not needed in America, but after the war of 1812, he changed his views, as Randall has the candor to narrate in his very able life of Jefferson; for he *there* thinks if America would cease to be a mere colony of Great Britain, we must become independent of her in manufactures. All sound economists have held that all primary interests of man may flourish together where the conditions are favorable, as in France. By a sound system of currency, great industry in all branches, she is to-day the money centre of Europe, for she gets and keeps more gold and silver than any other nation, not excepting Great Britain, because France combines all industries more equally than any other in Europe. America produces cotton and gold for Europe, but the latter does not return in a manufactured state, like the former. America is indebted to Europe, and Europe still keeps a great market here for all kinds of manufacture, even from American productions, and thus in various ways we are behind the great industrial states of Europe in our commercial exchanges; and this Mr. Jefferson fully realized by the same experiences of this country induced in the Revolution and War of 1812.

Mr. Jefferson found the French war still existing, and though he had strongly sympathized with the cause, we can not discover that he leaned any more in his policy to France than the preceding administrations of Washington and Adams. He now had to uphold the American flag against the edicts of Great Britain and Napoleon, forfeiting all neutral

commerce which should attempt to go to the shores of the one or the other belligerent power. To defend American commerce, Mr. Jefferson adopted the embargo and non-intercourse policy. It was in the end utterly ruinous to the commerce of America, and affected other interests very seriously; even his own estates did not escape this temporary calamity, the stagnation of all kinds of business. The war gave some relief, though years after there was again a business crisis, owing to the suspension and resumption of specie payments, and their incidents.

The most valuable and lasting measure of Jefferson's eight years' administration of the government was the acquisition of Louisiana, in 1803, for the price of $15,000,000. The credit is not altogether the merit of his administration. Napoleon saw that war with England would endanger this territory, and he said he would deed it all to the United States, and thus build up a great power to displace Great Britain upon the sea. When he wanted the sinews of war, he did not longer hesitate to listen to Robert R. Livingston's importunities to buy New Orleans and all territory east of the Mississippi river, and the latter was quite upset when told we could have all of Louisiana by paying the sum of 60,000,000 francs. He was not authorized to make so great a purchase, but on the arrival of James Monroe the bargain was struck, and America doubled her territory for that paltry sum. Mr. Jefferson's administration is to be credited with opening the negotiation for New Orleans, and having accepted the proposal of Napoleon to take the whole. Great credit is also due to Mr. Livingston for his skill and adroitness in opening and conducting this negotiation. But we think that France, by her great emperor, placed America under a renewed obligation, for she first gave us independence, and then the power to keep it forever, unless we finally fall to pieces by our expansion and internal corruptions; for, as Montesquieu says, this is the fate of all great republics. Mr. Jefferson did not accept this view, and in his second inaugural as President of the United States he uttered the sentiment that he

knew the acquisition of Louisiana had been disapproved by many from candid apprehension that the enlargement of our territory would endanger the Union. But, he says, who can limit the extent to which the federative principle may operate effectively, for the larger our association, the less it will be shaken by local passions; and, in any view, is it not better that the opposite bank of the Mississippi should be settled by our own brethren and children than by strangers of another country? The memorable words of Napoleon are not to be forgotten: "I renounce Louisiana. They only ask one town, but I already consider the colony entirely lost, and it appears to me, in the hands of this growing power, it will be more useful to the policy, and even to the commerce, of France, than if I should attempt to keep it."

Mr. Jefferson did not favor internal improvements by the federal power, as he did not believe any such power to improve internal communication embraced within the purview of the Constitution. He held that it was the diffusion of power, and not centralizing it, that constituted good government. He was the leader of the strict constructionists, so-called, for Madison had been for a long period in favor of enlarged and centralized power quite as much as Hamilton, but he soon fell under the influence of Jefferson, and ceased to be a Federalist. At least he and Hamilton, though co-operating to establish the Constitution, soon widely differed as to its actual powers and limitations. Thus Madison sustained Jefferson in issuing a proclamation of neutrality of the government as to France, and he, under Jefferson's lead, drew up the Virginia Resolutions of 1793, and which were so strongly denounced by Patrick Henry as leading to disunion. Washington took a deep interest, and went many miles to support a sound representative to produce their repeal, and induced Mr. Henry to take an active and decided course in again coming forward to effect their repeal in that State.

Jefferson drew the Kentucky Resolutions, but this fact did not become known to the public until 1821. So, whatever merit or demerit attaches to these measures belongs to Jeffer-

son, although it must be acknowledged that the Virginia resolutions and report drawn by Madison are the more skillfully and ably done. It is quite true that Madison possessed the most exact and logical mind in the just construction of constitutional powers. He was very much abler in the exposition of constitutional law, though he did not lead Jefferson in politics, except when the Constitution was framed the papers composing the Federalist overcame many objections Jefferson had against the Constitution, and made him friendly to its adoption when properly amended. A bill of rights was a *sine qua non* to him before nine States should ratify; and yet he concluded finally that the Massachusetts policy was safe in adopting the Constitution, and accompanying this act with the proposed bill of rights for subsequent adoption.

Jefferson thought it necessary that we should have a federal government that could stand on its own legs, and not be dependent on the States for maintenance; but he did not wish a strong government, or one that would much impair the States in their reserved power. He thought home government and local rule the safe way to secure the rights of men, and the good of all. He always regarded centralized power as dangerous to liberty, and for this reason he and Hamilton could not harmonize their views when they came in conflict in the Cabinet of Washington. This explains the principles of his Kentucky policy, claiming for the States the right to judge the extent of federal power, and the right of redress in case of infraction. Thus Jefferson originated those measures so full of peril to the Union, and on which Mr. Calhoun based his measure of nullification, and the South subsequently carried secession. It is also true that many leading federalists in New England affirmed these asserted state rights at a time when we were at war with a foreign power. So Mr. Jefferson opened a dangerous course in our politics which has ended with the logical sequence that federal power possesses the *illimitable* right to renovate and re-construct these States upon such principles as federal authority may ordain or prescribe for them.

Indeed, there are criticisms to be made also upon his own views that Louisiana could not be acquired, except by the violation of the Constitution. Certainly, upon this principle, he violated that instrument, in his own judgment, for a political necessity, but nearly all have justly held that Louisiana was acquired by that sovereign power that inheres in and appertains to every nation. He also held another heresy, that one generation cannot bind another for a greater period than twenty years; and, as a natural sequence, he thought it well that a longer period should not pass by without a rebellion, to bring States back to first principles. Moreover, he feared and condemned the re-charter of the United States Bank, by the administration of Madison in 1816, though supported by all the leading and rising statesmen of that age—urged on, as it was, by a great exigency in the government to once more return to a sound financial basis. Madison yielded to this exigency, requiring the general government to inaugurate a solid national currency.

But we find our space is nearly exhausted. We have room but for a few remarks, and these must necessarily be desultory. Jefferson would not stand among the advanced reformers of this age either by his example or his teachings. But this is quite explainable because there are continual steps in every movement or tendency of the world; and one age takes up the line of thought where a former age left it, and hands the reform down to succeeding times with new principles and new results that the first age never foresaw nor comprehended. Thus it is that Jefferson, in his real example, was no further advanced than the second age of our history which he led: and Jackson, the second Adams, Calhoun, Burton, Clay, and Webster, stood on the same level of political action, though they all in turn differed on great measures. Then there came a new school deducing their principles from the Declaration, to break up and overturn the Constitution and the government that Jefferson had helped build. This inaugurated an age of "irrepressible conflict," war, and emancipation, as the logical sequence of the Declara-

tion, though the author had drawn that instrument only to justify the dissolution of the British Empire, and as a justification of these States in setting up a new form of government for themselves.

Jefferson planted the seed, and this revolutionary document led to a great civil war as much as any one paper can be said to cause any great act in any great nation; and 4,000,000 of negroes broke their chains to look up to the Declaration and Lincoln's Proclamation as the basis of their freedom, and which are now incorporated into the Constitution by the XIIIth Amendment, and their rights as men are therewith forever secured to them.

ART. V.—1. *On the Structure of the Simple Tissues of the Human Body.* By LIONEL S. BEALE. London. 1861.

2. *Uber die Nerven und das Blut in ihrem gesunden und Krankhaften Zustande.* (On the Nerves and the Blood in their sound and diseased conditions.) Freiburg. 1830.

3. *Protoplasm; or, Life, Force, and Matter.* By LIONEL S. BEALE. London. 1870.

4. *Icones Histologicæ.* Von KÖLLIKER. Leipsic. 1864.

5. *Vom Bau des thierischen Körpers.* (Of the Fabric of Animal Bodies.) F. LEYDIG. Tubingen. 1864.

6. *Uber die Ubereinstimmung in der Structur der Thiere und Pflanzen.* (On the Agreement in the Structure of Animals and Vegetables.) Schwann. Berlin. 1839.

IT is the purpose of this paper to give a condensed *résumé* of the origin, progress, and present condition of the Cell-Theory, in the first place, and to indicate its leading relations to the biological group of sciences, in the second. That important modifications of the current doctrines of physiology,

psychology, pathology, and medical science, must ultimately accrue from the microscopic scrutiny of tissues which has been in progress during the last two centuries, though brought to comparative perfection only with the last twenty-five years, has been long conceded, not only by scientific men, but by thoughtful workers in every department of life. It would, however, be overstating the prospect very materially to intimate, as some enthusiasts have, that the final definition of matter, except in Aristotle's view of the case, will ever be accomplished through the agency of the microscope; for the highest power of Beck's best binocular instrument, 10,000 diameters, or 1,000,000,000 areas, to be multiplied by 50,000 in the matter of diameters, or by 2,500,000,000 in the matter of areas, the primitive atom, if that interesting subject of speculation may be regarded as having an entity at all, would scarcely be revealed—a consideration that shows the utter hopelessness of penetrating to the very beginnings of life by any miracle of microscopy that the optician will ever be able to furnish, the practical limits of the instrument having already been pretty nearly attained.

It is quite true, nevertheless, that a proximate analysis of living tissues has been obtained, and that, while non-nucleated cells exist as the lowest forms and the primordial starting-point of animal life, in the general evolution of complex organisms, whether animal or vegetable or participating in qualities common to both, the nucleated cell is not only a special starting-point of all really organic structures, but that the structure is evolved and grows by means of the primordial cell reproducing itself, undergoing various modifications as connective, muscular, osseous, or nervous tissue, and thus building up a complex organism and a complex series of functions, all of which, as special forms of life, are derivative from one primordial form. The impassable partition that formerly existed between the different types of tissue has thus been broken down, with material advantage, no doubt, to enlightened views of the origin and special determining causes of variations in function, and cer-

tainly with material advantage to the study of morbid function, whether presented in the form of physical or of mental disorder—for diseases are in ultimate analysis but perverted cell-activities, with a consequent tendency to disintegration and death.

Thus, for example, in tuberculosis, whether pulmonary, renal, or cerebral, the deposited tubercle results either from the nucleation and multiplication of masses of germinal matter (protoplasm) which have exuded through the capillary walls from the blood and set up an existence as morbid tissue, or from nuclei, or germinal centres, in connection with the capillary walls: in a case of tubercle of the *pia mater* (envelope of the brain) Dr. Beale * reports that the deposits were connected with the vascular walls, and that the nuclei of the cells were unquestionably implicated in their origin, if not directly responsible for them. Dr. H. C. Bastian,† the great exponent of the spontaneous generation theory, and Dr. Comil,‡ both eminent microscopists, with some differences in the manner of expressing it, substantially support this opinion.

Again, in pneumonia, the so-called exudation, or morbid product that fills up the vesicular portion of the lung, usually considered as the result of a proliferation of the connective-tissue corpuscle, is rather the result of a proliferation of minute particles of germinal matter (considerably smaller than the white blood corpuscles) that have passed out through the capillary walls with the liquor sanguinis—a phenomenon which, by the way, occurs in all inflammatory processes and fevers to a greater or less extent. The common white corpuscle of suppuration originates in the same way, as any reader may observe for himself, by producing a slight superficial abrasion on his finger, and observing it for several hours under a power of from 300 to 500 diameters. First a hyaline liquid appears on the surface of the abrasion; but, in the course of three

* Microscope in Clinical Medicine. London, 1867, p. 166.

† Tubercular Meningitis. Edinburgh Medical Journal, volume for 1867, p. 875.

‡ Tubercle in connection with the vessels. 1868.

hours, the period depending somewhat on temperament, minute granules make their appearance, and gradually grow larger and larger until they resemble the white blood corpuscles. These cells have movement and life in the hyaline plasma in the same manner as the normal white corpuscles in the circulation have, and contribute in a similar manner to the formation of new tissue in the place of that destroyed by the abrasion. The suppuration corpuscle is, indeed, identical with the leucocytes of the blood, and the hyaline liquid that first exuded was blood plasma, which percolated through the damaged walls of the numerous capillaries, disarranged and broken up in the process of bruising, the finest of which were not more than .001 millimetre in diameter, but yet performed a definite office in plasmic circulation.

In cancer, on the other hand, the acute histologist discerns one of the results of the excessive multiplication and perversion of germinal matter, consequent upon the appropriation of an excess of nutrient pabulum; while in cirrhosis, with its shrinking or hardening or wasting, diminished nutrition is indicated, but this diminution may occur either as the exponent of defective nutrition in general, or as the exponent of a growing impermeability of the septum, or cell-wall, through which it must pass in order to be appropriated as pabulum by the interior fluid contents of the cell. So, also, the excessive appropriation of pabulum may result from excessive permeability of the septum or from the nature of the fluids in which the cell is bathed. Suppuration of the tissue known as epithelium, which is very abundant in germinal matter, furnishes a familiar illustration of this phenomenon. As the result of an excess of pabulum, the cells send out buds or processes with greater rapidity than they can be converted into formed matter on the surface, so as to constitute proper tissue-cells, and these undeveloped cells become the white corpuscles of the suppuration that inevitably ensues. Hence, there is no simpler form under which pure protoplasm can be studied than that known even to the uninitiated eye as the white matter of suppuration, which is generally present in inflam-

matory processes of all types. In contrast with these phenomena, fatty degeneration presents a series of examples of the transformation of the cell-contents from the state of germinal matter into the non-vital product known as fat, the septum or cell-wall constituting the external membrane of the vesicle, which, however, is still in a condition to be reabsorbed as nutriment. How to bring about this necessary reabsorption is thus the great and complex (generally hopeless and baffling) problem with which the physician has to deal in treating cases of fatty degeneration whether of the strictly organic or of the nervous structure.

But on these points it is enough to say, once for all, that, in all instances whatsoever of morbid function or of pathological transformation, the medical man is confronted with perverted cell-activities, and may trace the disorder, whatever its type, to this one source. It would be very unsafe to assert, however, as some with a flavor of quackery have done, that this perversion is not very frequently one of the results of habitual perversion of function, continued until the devitalizing process has set in, and consequent morbid nutrition, local or general, has followed; for it is undoubtedly true that the contagia of numerous diseases are such from the fact that they perpetuate their processes when introduced into a healthy organism, and induce as the result of their incubation a perverted cell-activity, either local or general; and it is very likely that the contagion itself consists, in most instances, of minute particles of morbific germinal matter swimming in the atmosphere—not as the specific germs of specific diseases, as Dr. Tyndall's theory presupposes, but as ordinary germinal matter from bodies in which perversion has been once set up, and capable of perpetuating and multiplying itself and the morbific agency whence it sprung. This is a general view, and one to which there are many special exceptions. Estival catarrh (hay-fever) is, for example, due to the action of the pollen of flowering plants, grasses included, which in contact with membranes absorb moisture, develop and expel a granular

matter of protoplasmic constitution; * and many other instances could be mentioned in which the generative cause of the perversion is vegetable rather than animal protoplasm—a trifling distinction certainly, so far as regards qualitative or quantitative analysis, but one that is omnipotent in determining the special type of perversion that will necessarily follow its introduction into the system.

But what is a cell? This is a question that must necessarily precede the general retrospect, for, in estimating the value of one's investigations dated from a given starting-point, in this case represented by the very general ideas of organism-building that prevailed with Fallopi, of Modena, 1523–1562, and even with Borelli, of Pisa, a century later, it is necessary to know exactly what one has arrived at, before the intellectual distance traversed can be more than proximately stated. A cell, then, whether animal or vegetable, is a minute globule of germinal matter, resembling the white of an egg in appearance, and invariably consisting of carbon, hydrogen, oxygen, and nitrogen, producing in their union a complex substance styled proteinaceous or albuminoid matter, but so far differing from any artificial union of these constituents as yet produced as to exhibit vital phenomena and movements, to be susceptible of appropriating and converting nutritive particles, of growth and reproduction, and finally of entering into organic bodies. The cell may exist as a simple granule of germinal matter, without cell-wall, and of wholly structureless consistency, as in Max Schultze's non nucleated amœba, a simple and homogeneous granule of primordial slime, or in Hæckel's *protogenes primordialis*, recently discovered in the Mediterranean, or in Cienkowsky's non-nucleated monads, namely, the *monads amyli* and the *protomonus amyli* discovered in 1865.

In all cases, so far as observed, the non-nucleated cell multiplies by division. More generally, however, the cell contains within its periphery a minute spot, somewhat more

* Blackley on the Causes and Nature of Hay Fever.

transparent than the surrounding germinal matter, which, when tested with ammoniacal solution of carmine, takes a deeper red than the circumambient slime. Such spots are known as nuclei under the more antique terminology, and as germinal centres under the simpler and more modern. Still more interior germinal centres, formerly styled nucleoli, often exist. The nucleated cell reproduces generally by budding or proliferation, but there are special exceptions to this rule, constituted mainly by the ova of the higher animals, in which the process commences in the segmentation of the cell, and proceeds by repeated division until a hyaline fluid is formed, in which new cells make their appearance: the latter become the first centres of nutrition in the evolution of the highly complex organism that follows. The reader of far-penetrating insight will find in this general law of the nucleated cell the source of the rose-bud, the first step toward reproduction in that plant, and of all the varied and wonderful blossomings of vegetable life—the ultimate principle to which are referable the most striking and delicate forms of beauty presented by the vegetable kingdom, so wonderful, when pressed to an ultimate cause, is Nature's fecundity of forms as compared with her economy of laws. With the hand of a master musician she multiplies a single theme into so many varied and apparently diverse harmonies that the observer of natural phenomena, bewildered with the complexity and multiplicity of the beauties evolved, is startled, as with a revelation, when he finds them all grouping themselves about a single and very simple law of life.

Lastly, the cell may be not only nucleated, but it may, by the conversion of germinal matter into solid tissue, or tissue more or less approximating to solidity, have developed upon its external periphery a thin, membranous structure, known as the cell-wall. This wall is perforated with infinitesimal capillaries, through which nutrient particles are drawn and absorbed by the interior germinal matter, to be digested and assimilated by the very interior germinal centre which now carries on the process of nutrition. The wall is susceptible, also, of

elongation into processes that embrace nutrient particles placed at a given distance and appropriate them. At this point, which represents the fully-developed cell, as it occurs in the gray matter of the human brain or in epithelial tissue, as contrasted with the non-nucleated cell, the differentiation has proceeded so far as to present glimpses of certain subsequent processes. Reproduction has been appropriated by a particular centre, a fact subsequently maintained in all classes of animals and vegetables; nutrition has taken a specific form, which it subsequently maintains in all the higher animals, though with higher and higher elaboration of the process; and, in the prolongations of the cell and its putting out of processes to embrace and appropriate nutriment, the acute naturalist will suspect that he has caught the first faint trace of the more permanent adjustment of life to its external relations that exhibits itself in specific organic structure adapted to that purpose. Mr. Spencer bases his definition of life upon this last enumerated peculiarity of the cell—a fact that serves to explain, without further comment, how partial and inadequate that definition is. From this fully-developed cell to the lowest permanently organic forms of insect life the step is no larger than that which intervenes between a non-nucleated amœba and a completed cell. The foundation of all those varieties of function that pertain to animal tissues and of all organic forms has also been laid; for in the cell, as last constituted, while the germinal centre is the specific seat of reproduction and of the nutritive processes, the peripheral germinal matter is the specific seat of morphological and functional development. The contractility of the muscle and the neurility of the nerve are two of the most familiar results of the centre of morphological and functional differentiation that has now been set up within the cell. But how, it will be asked, shall many-celled organisms be developed from unicellular organisms? Simply in this way. As the cell-wall becomes more and more permanent and impermeable, new nuclei would necessarily be established in the superabundant germinal matter, establishing new

centres of nutrition within the periphery of the original cell, and these new centres, adapting themselves by an inherent law of life to the relations environing them, would necessarily assume organic forms and functions subordinated to the general and established life of the minute organism. This is no speculative view, though, for the sake of brevity, it is presented under the form of a speculation. On the contrary, in the development of the suppuration corpuscle from exuded plasma (germinal matter), in the reproduction and distribution of cancer-cells, and equally in the gradually enlarging periphery and increasing complexity of the tubercle, are furnished abundant illustrations of the subordination of new centres to one general and parent centre, in a manner analogous, no doubt, to that in which many-celled organisms were primordially developed from the primitive unicellular. Put an amœba that has no cell-wall in water and observe the effect under a power of 650 diameters, and the formation of a cell-wall may be traced, step by step, from the formation of minute granules on the surface to their final condensation into a structure of membranous consistency, analogous to cuticle, and of sufficient firmness of texture to act as a restraint on division. The hardening of the wall introduces the necessity of a permanent orifice for the reception and conveyance of nutritive particles to the nutritive centre within, and finally, of a second orifice for defecation; and this is the fundamental conception of an alimentary canal, and one that actually occurs in the lower types of organic structures. Again, with the development of this nutritive orifice, the apprehension of nutritive particles would devolve upon a single point of the minute organism, and thus at what is now known as the cephalic extremity of the insect would commence a new differentiation—that is to say, a cell at this extremity would become the centre of that apprehension and prehension of nutriment formerly radiated in all directions alike. This would develop a nerve-cell, exhibiting feebly at first, and afterward more definitely, the specific quality known to physiologists as neurility; and, next, for

communication with the organism in general, the tendency of the cell to put forth processes would be called into requisition, and minute radiating filaments would be established. This, again, is the fundamental conception of a nervous system—a nerve cell with a caudate filament—and one that actually appears under the microscope, after dissolving minute insect structures of the lower types in diluted nitric acid or muriatic, which has the property of hardening the nervous structure, while decomposing the more solid tissues. And, complex as the nervous system of a man is, it is, nevertheless, resolvable into this primitive type, or rather into myriad repetitions and combinations of it.

Finally, having arrived at a fixed centre for apprehension, the special senses, vision, audition, and olfaction, would follow as different adaptations of the apprehensive centre to external relations. It is very evident from these considerations, which are among the few not yet caught up and appropriated by Darwin and Huxley, that Herbert Spencer's definition of life, as the continuous adjustment of internal relations to external relations, covers a large and important class of phenomena; but it is equally evident that it in no way indicates what life is, nor explains by what secret laws of transformation the internal organism replies to the external relations, in the complex motor and sensory phenomena that life in its higher forms exhibits.

Thus far it has been our concern to put the reader in possession of certain striking facts that carry with them the definition of the cell as the ultimate unit of all morphological structures, and, in their very nature, illustrate its possibilities and potentialities. Other facts of the same type will be incorporated *en passant* in reviewing the origin and progress of the theory.

From the crude application of the microscope, in 1566, to the study of the higher animal structures, made by Borelli, of Pisa—whose observations were grossly misinterpreted by his attempt to adapt them to the then popular theory that all diseases were caused by animalcules in the blood and tissues,

and who describes the corpuscles of suppuration as animalcules, and says he has observed them delivering their eggs—to the investigations of Baron Haller, 1757, no glimpses of the cell-theory occur, although physiological inquiry was exceedingly active, and many very important discoveries were made. Swammerdam, 1658, had, according to Boerhaave, discovered and described the blood corpuscle as minutely as could be done with the very imperfect instruments then in use. Malpighi had published his famous observations on the minute structure of the lungs, kidneys, spleen, liver, and membranes of the brain. Robert Hooke had pointed out the cellular structure of plants, 1667, and Malpighi had published an elaborate memoir on the same subject in 1670, in which he gave the name of utrical to the cell, showed that it was an isolated body and could be separated from its fellows, and ventured the opinion that it was an independent entity. There are some doubts whether Haller employed the compound microscope at all, or whether he merely adventured a theory of resolution based upon the investigations of others, when he resolved the solid parts of animals and vegetables into two elements, namely, fibres and evasated and concreted glue. He himself says that the fibre is invisible except *solâ mentis acie*, and makes no allusion to cells beyond a very cursory description of the blood corpuscles and the spermatozoids, discovered by Leenwenholk in 1687. On the other hand, in the English edition and compend of Haller's *Elementa*, edited by Dr. Cullen and published in 1776 at Edinburgh, he is made to say that the smallest elements in animals and vegetables can only be distinguished by the finest microscope—a very free translation, undoubtedly, of *solâ mentis acie* (with the mind's eye). The manner in which fibres are produced and viscid fluids concreted into connected tissue is one of the questions upon which the physiological baron did not think best to enter, and yet it was the very question most interesting and absorbing of all, for thus far Haller had really added very little to Galen's theory of *partes similares*, of which Fallopi, of Modena, was an able advocate. Indeed, the learned world is indebted to

Fallopi for the only systematic exposition of Galen's views as to body-building and special histology. Nevertheless, the popularity of Haller as a physiologist was so great that, when two years after the *Elementa* appeared, C. F. Wolf published his *Theoria Generationis*, a work which distinctly proposes and demonstrates the cell theory of tissue-building, his (Wolf's) investigations attracted very little attention, and his work was laughed at as one of the dreams of a confirmed quack.

The volume marks, however, an era in the history of histological investigations under the microscope, and in its inquiring, cause-investigating, and truly scientific spirit, should not be mentioned in juxtaposition with the comparing, generalizing, and compiling spirit visible in every paragraph of Haller's elaborate treatise, which is but a very timid and imperfect digest of the results that microscopy had in his day amassed, and must not be accepted as an authority even in that respect. The views of Wolf were as follows: That every organ at first consists of a mass of clear viscous fluid, possessing no organization of any kind; that, secondly, cells are developed in this fluid plasma, which may either continue their existence as globular or polygonal cells, or may suffer an elongation into vessels, the process being identically the same, whether it is examined in the vegetating point of a plant or in the young budding organs of an animal; thirdly, that cells and plants thicken and enlarge by subsequent deposits of the solidescible nutritive fluid. In the plant, according to Wolf, the cells are at first in communication, but subsequently become separated; while in the animal they always remain in communication. In each case they are mere cavities, not independent entities, and organization is not effected by them, although they are the first visible results of the organizing power inherent in the living mass. This power he terms the *vis essentialis*, which, however, has in his view no affinity with the psychic form-evolver, more anciently supposed to control the several steps of organization, but is simply a convenient name for two facts, which he is at considerable pains to demonstrate, to wit: first, that nutritive

currents exist in living tissues before any canals are developed for their passage, and are determined in particular directions by some power independent of external influences; and, secondly, that transformations in structure and composition take place with the same independence of external relations. The two points in which Wolf fails to anticipate the modern theory are very clear from this statement of his views, which is a free but substantially accurate translation of sundry passages in the *Theoria Generationis*. He held, in the first place, that cells were non-independent, both physiologically and anatomically; and, in the second place, that they were but passive results of a vitalizing and organizing potentiality. As a consequence, in his view of the case, organization commences in the differentiation of the homogeneous living mass into cells, through the agency of a vital principle, or *vis essentialis*. These views were subverted by subsequent investigation, but it must be admitted that a strong tendency to return to them has recently set in. Of course, Wolf was in error in the statement that the cells of plants are in communication in their younger state, but this error was a natural and inevitable result of the very inferior instruments in use in his day, for the ten-dollar toy microscopes, offered for sale by modern opticians, exceed, both in power and in perfection of definition, the very best appliances used in scientific investigation even as late as the end of the eighteenth century.

But, original in conception and substantially correct in observation as Wolf's theory was, the fibre theory of Haller continued to be the prevalent one among physiologists for over a century, and its author was an authority down to 1780, when a reaction set in, and the globular theory superseded it. Leenwenholk* had, as early as 1687, announced that all the primitive tissues of the body were composed of globules, but his volume was as unfortunate as that of the originator of the cell-view, until, in 1779, the author of that still unsuperseded work, *De Structurâ Nervorum*, led a crusade against the fibre

* *Opera Omnia, seu Arcana Naturæ detectu.* Leyden, 1687.

fallacy, and was supported by Fontona* in 1787, by the Menzel brothers† in 1812, by Trevironi‡ in 1816, and afterward by Bauer, Hensinger, Prevost, and Dumas. Milne-Edwards, Hodgkin, Baumgärtner, F. Arnold, Raspail, and other eminent observers, all, Hodgkin excepted, holding the view that the globule is the ultimate physical element. Of these eminent inquirers, Raspail rejuvenated substantially the animalcule theory of the etiology of diseases, of which Professor Tyndall's germ-theory is a clever modification, adapted to later microscopy; and, in regard to them all, it must be remarked that they undoubtedly employed the term *globule* to represent the same entity now universally styled the cell. In a similar manner, as late as 1856, Dr. Homer, than whom no more thorough physiologist has contributed to American literature, uses vesicle and cell indiscriminately to designate what is now known as the nerve-cell. The usage was one of the results of the imperfection of instruments that continued down to 1850. All these gentlemen were physiologists rather than naturalists, and but carried out the impulse set in motion by the great work on nervous structure published in 1779, in which the brain globules were minutely described as one-eighth as large as the blood-globules. Bauer was the first to measure the primitive globules of brain and muscle; he assigns them an average diameter of .00125 of a millimetre. The great Trevirani dissolved tissue into three elements, to wit: fibres and globules, with a homogeneous plasma as a starting-point; while Hensinger started all tissues from the globule, and formed muscular fibre by the linear opposition of globular elements, canals and vessels arising, in his opinion, from the linear opposition of vesicles originally derivative from globules. Milne-Edwards next measured the globules of muscular and nervous fibre, and announced them as about one-three-hundredth of a millimetre in diameter, concluding that

* *Abhandlung über das Viperngift, das Amerikanische Gift, w. s. w.* Berlin, 1787.

† *De Structurâ Cerebri.* Tubingen, 1812.

‡ *Vermischte Schriften.* Gottingen, 1816.

these spherical corpuscles constituted all organic textures, under certain laws of aggregation. Dr. Robert Brown, of Edinburgh, made, after Wolf, the next important discovery as to the origin of tissues, in 1833, in the course of certain minute investigations regarding the organs and modes of fecundation in the lower orders of plants, in the demonstration that the reproductive cells of plants are nucleated, that is to say, have germinal centres within their periphery. The importance of his discovery was, however, neither comprehended by himself nor appreciated by the physiologists of his day, except as a very curious incidental fact. Again, verging upon the speculative, M. Raspail, in 1837, while recognizing the reproductive function of the cell as the ultimate principle of crescence, proposes to regard it as consisting of atoms spirally arranged about an ideal axis, and compares the formation of the cell with that of the crystal. Hence, the frequency with which the term *crystallization vesiculaire* (crystallization into vesicles) occurs in the works of that distinguished histologist. This aberration from the direct and observational doctrines of his contemporaries is, however, interesting only as the starting-point of the strong speculative impulse that was developed a few years later, and concerns itself vitally with the origin of life as a phenomenon of matter. It is clear, though, that thus far, notwithstanding the fact that several organic acids and bases have responded to the labors of the laboratory, no real point of contact has been established between vital and other material phenomena, the hard conditions of the problem having defined and shattered one ingenious theory after another, until it is proper for Mr. Spencer to abandon the analogy borrowed from Raspail and frankly confess that there is no intrinsic relation between cells and crystals. The resemblance of the two processes is a very superficial one, and will not bear quotation.

But to return to the main thesis. Although to Dr. Brown must be ascribed the honor of discovering and elucidating the phenomenon of nucleation, particularly in the vegetable cell, it had already been noticed in various patho-

logical as well as healthy animal cells previous to 1833; notably by Purkinje, in 1825, in the ovules of birds. In 1836 Valentin, calling attention to the very intimate relations subsisting between vegetable and animal cells, attempted to demonstrate that cells are developed about nuclei, limiting his remarks particularly to pigment-cells. C. H. Schultz, in describing the blood corpuscle, Rudolph Wagner in the egg, and Henle in epithelial tissue, had also proved the existence of nuclei as more or less universal. It is to be remarked, also, that Valentin, in his description of epidemic cells, compares them directly with vegetable, and that Armand de Quatrefages and Dumortier had actually observed the origin of young from fully-developed cells in the embryo of the fresh-water snail. These prepared the way for the comprehensive generalization of Schwann, who, drawing upon Schlieden's minute observations on vegetable structure, in which, in 1838, that distinguished microscopist clearly explains the formation of vegetable cells, extended the theory to animal tissues. The difficulty—and a formidable one it was—that barred the way to a general identification of the processes of the two classes of cells, was the long-entertained opinion that the animal tissues, the cells of which are furnished with vessels, grow and develop in a manner essentially different from the tissues of plants, the elementary particles of which were conceded to be independent entities, and to grow without vessels. An evidence of the tenacity of this opinion occurs in the ascription by the elder physiologists of a plant-like life to the ovum, during the period of its exhibiting undoubted vital movements. Henle administered the first destructive blow to this opinion, when he proved that the cells of epithelium actually grow in the absence of vessels.

Taking up the discovery of Robert Brown, Schlieden applied himself to the study of its function, and finally, rejecting the more antique terminology borrowed from the Latin, manufactured the term *cytoblast* (κυτος a cell, βλαστος a bud) as a more correct designation. In the course of this inquiry he discovered that in very large and highly-developed cytoblasts

certain smaller bodies often existed, which were also of globular form, and that as many as four were often present in a single germinal centre. It is true that Valentin claims to have discovered these so-called nucleoli at an earlier period, but, if so, he did not publish his discovery, and Schlieden must, therefore, be credited with this important addition to the science of tissues. Schlieden further states that these minute bodies exist previous to the cytoblast, and seem to be among the causes of its generation. His observations on the genesis of cells are interesting as the first minute account of a process even yet comparatively unfamiliar. Starting with a blastema that he styles vegetable gelatine, and compares with pectin, the basis of gum tragacinth and other mucous substances, and which may be readily studied in the extremity of the pollen tube or in the embryo sac, he observes that the first process consists in the precipitation of protein granules, upon which the blastema becomes more or less opaque. Larger granules, of sharper definition, appear next, and constitute the nucleoli about which the smaller granules collect to form nuclei or cytoblasts. These grow considerably in this free state, but have no sooner attained their full development than a delicate and transparent vesicle appears upon the surface. This completes the cell. The vesicle now expands and becomes more consistent, the walls consisting wholly of gelatine. The cytoblast continues in its former state, while the cell grows larger and larger, until the germinal centre is merely a minute point as compared with the peripheral portion. Within these cells, again, new cytoblasts appear and grow, forming young cells that fill up the periphery of the mother cell, and finally obliterate its boundaries. Than these two forms of cell-evolution, no other method appears to have entered into Schlieden's calculations—which is all the more singular from the fact that their multiplication by fissiparous division had already been demonstrated by M. Mirbel, and completely confirmed by Von Mohl in his observations on the spores of cryptogamous plants. He was aware of these observations, but regarded them as illusions resulting from

the transparency of the younger cells, which, until a later stage, rendered their processes undiscernible.

Schwarm adopted these views and applied them to the study of cartilage, as to which, and all animal tissues, his views were that, in a structureless or minutely granular blastema, nucleoli are first formed, which grow by the deposition of minute granules about them in a stratum, that gradually assumes definite consistency. This completed cell-centre accepts its nutrition from the original centre, which grows by the steady deposition of new molecules between those already existing; but, at a certain stage, a stratum differing in constitution from the original blastema is deposited upon its external surface, and thickens into a cell-wall in consequence of the continuous deposition of new molecules, gradually consolidating as to its external surface into a kind of membrane. The expansion of this membrane takes place by the deposition of new molecules, a separation from the germinal kernel occurs, and the interplace between the membrane and the kernel becomes filled with a transparent fluid denominated the cell-contents. During this expansion the original centre remains fixed to a spot on the internal surface of the membrane. Such, briefly condensed, were the leading features of the first definite generalization of the cell-theory.

The object of Schwarm, to show that all organisms, whether vegetable or animal, originate in cells, and that all tissues are combinations of cells, was a comprehensive one; and, although he confesses that many things are as yet unexplained, the honor of having been the first comparatively to demonstrate the theory pertains to him, unless Wolf may be regarded as having anticipated his leading doctrines, which in candor must be qualifiedly admitted. Considering the great superiority of modern instruments and the activity exhibited for the last forty years in this department of science, it is really singular how few modifications of Schwarm's phraseology have had to be adopted. The position he gives to the germinal centre, after the membrane is formed, actually separated from the surface only by the wall and clinging to it, is one that has not

been sustained by the later investigations of physiologists, which assign to it a generally central, though by no means unvarying location; nor is the presence of nucleoli and walls now regarded as at all essential to the idea of a cell. The mode of formation described by Mirbel he admits, though with apparent hesitation. The question of origin by spontaneous generation in a homogeneous blastema is still in debate, with a probability of final decision in his favor.

In 1841, Henle gave a fuller and more analytic elaboration of the views of Schwarm and Schlieden, while excepting to the rigidity the latter had manifested in adhering to his special theory of cell-multiplication, which, according to the disciple, takes place in three ways—by budding, as in certain lower plants; by endogenous development (*Zeugung*), in which the cell-contents become the cytoblastema of other cells; by division or segmentation (*theilung*), of which he maintains that no examples occur in animal physiology, although, if the yolk of the egg may be regarded as a single cell, he considers that the formation of cells in the ova of animals may be named as a process very analogous to division. He prefers, however, to designate the latter as cording in (*Einschnurung*), and describes in very minute terms the division and subdivision of the yolk until it becomes a mulberry mass consisting of minute granules, remarking that this process, which had then been observed in the ova of frogs, fishes, molluscs, and medusæ, had probably merely escaped attention in the higher animals —a shrewd guess which was thoroughly confirmed as observation went on. He also adduces certain cases in which perfect cells appear to be developed in a cytoblastema in a manner inexplicable to the microscopist; nor are his observations, as compared with those of later expositors, at all definite as to the question, whether the primary seat of the segmentation in animal ova is the germinal centre, or whether it commences at the surface, although his general mode of description implies the latter and now contradicted view. The unsettled state of the questions called into being by the microscope, at this date, is well illustrated by the exceeding caution with

which Henle expresses himself. This is especially true of continental European inquirers, but not so true of English inquirers, for Dr. Martin Barry had already, in 1838, ascertained the importance of the germinal vesicle as the most primitive part of the ovum, and traced the whole process of cell-formation after fertilizing had taken place. He says, in 1840, that the germinal vesicle is not dissolved on or before fecundation, as previously supposed, but simply ceases to be pellucid, and that it fills with cells which become filled with the foundations of other cells, so that the vesicle is gradually rendered opaque. Every cell, whatsoever its minuteness, is, according to Barry, filled with the foundations of new cells into which its germinal centre has been resolved. These are really the nucleoli of the continental observers, which he regards as arising from the incipient division of the parent nuclei into discs. "If this," he remarks, "has really been the case, it affords additional evidence, I think, that reproduction of cells by the process I have described—namely, by division of the nuclei of parent cells—is universal."* It remains to add the facts demonstrated by Dr. John Goodsir in 1845, that, in the evolution of the fœtal organism, these cells within the germinal vesicle become the subsequent centres of nutrition, one governing the organization of the fœtal brain, another that of the heart, and so on, and that, consequently, the whole subsequent organism is, not only as to its forces, but also as to its anatomical elements, contained in the germinal vesicle of the ovum—that, finally, our complex bodies are actually divided into departments presided over by one central cell, the parent of all the rest—in order to give the fullest and most comprehensive idea of the problems into which the study of cell structure dips and how it proposes to resolve those problems. But, as the ovum of the female previous to fecundation is a perfect and even a typical cell, apparently as capable of organic development as it is afterward, it is very difficult to assign any satisfactory function to the male secretion in the pro-

* *Philosophical Transactions for* 1841, pages 207 and 208.

cess of generation, further than that it communicates an impulse to the development of the cell, without which its organic resources would never be unfolded.

The next great exposition of the cell-theory occurs in Huxley's first paper,* published in 1853, which is somewhat less positive in its materialism than those promulgated in 1868 in the celebrated lecture on the physical basis of life, originally delivered in Edinburgh in November of that year, and first published in the Fortnightly Review for February, 1869. In his first paper the professor holds that vitality, the faculty, that is, of exhibiting definite cycles of metamorphosis in form and composition, is a property inherent in living matter. There is, he observes, a condition of all kinds of living matter in which it is an amorphous germ—that is, in which its external form depends purely on ordinary physical laws, and in which it possesses no internal structure. Now, according to the nature of certain previous conditions, will be the differentiations in succession exhibited by the amorphous mass; that is to say, a pigeon's egg will produce a pigeon, or, in other terms, in some as yet unascertained manner, the amorphous mass of protoplasm represented by the yolk of an egg is definitely an epitome of the formative forces of the organism whence it comes. In the unicellular organisms, whether animal or vegetable, this morphological differentiation is external, and is accompanied by no developments of internal structure. The amœba is a familiar illustration. But in many-celled organisms an internal morphological differentiation precedes or accompanies the external, and the homogeneous germ becomes separated into a central portion which he calls the endoplast, and a peripheral portion which he styles the periplast. In this state the germ constitutes a nucleated cell. There is no evidence whatever that the molecular forces of the living matter (the *vis essentialis* of Wolf, or the vital forces of the moderns) are by this act of differentiation specially limited to the endoplast or to the periplast, their

* *Review of the Cell-Theory*, 1853.

subsequent transformations having no causal connection with each other, but proceeding in accordance with the general determining laws of the organism. On the contrary, the *vis essentialis* appears to have very different and independent purposes in view in thus separating the two. The endoplast grows and divides, but seems to suffer no other transformations. The periplast (under the professor's terminology includes both cell-wall and cell-contents) is the subject of all the most important metamorphic processes, and by its differentiation all varieties of tissues are produced. Nor is this differentiation at all due to any metabolic action of the endoplast, which has often disappeared before the metamorphosis begins, but rather to intimate molecular transformations in the substance of it, which occur under the guidance of the *vis essentialis*, or, to employ positive phrases, in a definite order, nobody knows why. In conclusion, he denies the three botanical propositions upon which Schwarm's theory was based, to wit: that the vegetable cell is a separate and independent entity, that it is invariably nucleated, and that the cell multiplies by the free formation of nucleoli in the cell-contents, and maintains the general invariability of Barry's law that the development proceeds by division, except in the embryo sac of the phanerogamic, and in a few other instances where the development of a cellulose membrane (periplast) around a mass of nitrogenous matter (the endoplast) describes the process.

It will be observed, from this abstract of Huxley's earlier views, that the term *protoplasm* has not yet been incorporated into his vocabulary. Nor has he yet adopted the term *surcode*, invented by Dujardin, in 1835, to designate the living, moving substance, endowed with contractility, which he had discovered in the lower animals, although, in common with Meyen, Max Schultze, and John Müller, Huxley's attention had been attracted to the subject. Surcode was then thought to be peculiar to lower animal organisms, and was described as having the property of irritability without nerves. But presently Siebold observed that the yolk globules of cer-

tain ova exhibited contractions and expansions. Other similar discoveries followed, and Kölliker conjectured on the existing data that the contents of all cells were endowed with contractility. All, however, both Leydig (who first regarded the movements of yolk globules as vital phenomena) and Kuhne (whose special comparison of the contractility of surcode with that of muscular tissue was important) included, considered surcode as a body *sui generis*, until, in 1861, Max Schultze demonstrated the similarity between it and the contents of the animal cell in general, and showed that the whole infusorial world consists of cells.

This led to a series of brilliant investigations at the hands of Unger, who identified the movements of surcode with the protoplasmic streams of vegetable cells; of Pringsheim, who demonstrated that all within the cell-wall was protoplasm, a name first brought into use by Remak; of Leydig, who maintained that the cell-wall was simply the burdened periphery of the cell-contents, and destroyed the vesicular theory in part; of Max Schultze, who gave the final *coup* to the vesicular theory, and elevated protoplasm to its true place as the physical basis of life; of Brucke, who went further, and demolished the idea that nucleation is necessary to the proper definition of the cell. The now celebrated Ernst Hæckel also contributed to the series by the discovery of organisms actually non-nucleated and having no cell-wall. The latter, however, in a recent paper, his monograph on the universe, frankly concedes that the protoplasm theory, in its elementary form, was originated by Cohn in 1850, restated by Unger in 1853, and at last completely established by Max Schultze in 1860. If so, Huxley's famous 1853 paper was substantially a plagiarism.

These prepared the way for the later and simpler views of Dr. Lionel S. Beale, who describes the cell in simple animal tissues as consisting of two kinds of matter, to wit: that which is forming and that which is formed. The one has the power of growing by the appropriation and transformation of nutriment, is always central in its situation, and includes what Huxley terms endoplast and others have styled

protoplasm; the other is always peripheral, and includes all that is known as periplast. Nuclei are simply new centres of germinal matter; nucleoli, when existing, simply newer and younger germinal centres. Between these and the consolidated material of the cell-wall lies a tract of matter on its way to conversion into formed material, which has lost somewhat of its germinal energy, but is not yet tissue. The formation of all tissues is initiated by the germinal matter of the cell; the nutrition of the tissues is continued by power that this matter has of appropriating and converting nutritive plasma in animals represented by the blood, and, lastly, the whole process of tissue-building is dependent upon the same quality. On the other hand, formed material is passive so far as these vital phenomena are concerned; differs exceedingly in its appearance; is often structured as in muscle or nerve, or vesicled as in the cineritious tissue of the brain and spinal cord, or wholly structureless as in the intercellular substance of hyaline cartilage; and possesses very diverse properties, as that of neurility in the nerve or of contractility in the muscle.

The conversion of germinal matter into formed material may be studied in the transformation of the white into the red corpuscle of the blood in epithelial tissues and elsewhere. The production of new cells is, according to Dr. Beale, wholly due to the activity of the germinal matter in the interior, the formed and partly formed material being wholly passive in the process of multiplication. There is not, generally, he thinks, a symmetrical division of the cell into two, then into four, and so on, as Robin describes the process in the development of the human ovum; but, on the contrary, there is rather a budding of the germinal matter and a dropping off of the portion that is to form the new cell, which takes the spherical form in obedience to very well-known physical laws. Dr. Beale denies that cells ever originate except from pre-existing cells, but upon no conclusive grounds. On the other hand, in the instance of the white blood corpuscle, it is more than probable that a free formation occurs from the blastema represented by the blood plasma, and in animals, during the

rutting season, when the blood is highly excited, there is a correspondingly rapid multiplication of these bodies.

Omitting to describe Huxley's 1869 paper on the physical basis of life, which contains no observations of sterling value, although it has elicited an unusual amount of discussion among persons who had never heard of protoplasm before, the views of Dr. Beale present the latest doctrines of a really thorough investigator, and with them the general description of the theory must rest; for even Hæckel's recently published, but not yet translated, *Anthropagenie*, presents no substantial additions to the science of tissue-building, although it defends Darwin very ably and very brilliantly.

Taking up the second part of our subject here, it should be observed at the outset that the first thing that will impress the general reader in these later studies, as compared with those of the earlier histologists, is the comparatively feeble emphasis they lay upon the cell, uniquely considered, and the stress laid upon protoplasm as the physical basis of life. Protoplasm lives, is endowed with contractility, and exhibits vital and almost neurile movements. The cell is simply its first step in the progress of tissue-building, and in the higher organisms insures the process of reproduction. It also controls the nutrition of the adult organism; but it is in the formed material that function is resident, and that the adjustment to external relations occurs. Could protoplasm be artificially manufactured, the rest would follow as a matter of course; but whether cells may originate spontaneously in a protoplasmic mass, or whether pre-existing cells are necessary, is a very subordinate question, so far as concerns the mooted issue between the advocates of the spontaneous generation of life and the opponents of that view. Even when vibriones are developed in a clear animal infusion, as in Dr. Bennett's experiments, or *bacteria* in an infusion of hay, as in Dr. Bastian's, the problem is not solved; for matter once converted into protoplasm acquires certain properties which cannot be immediately expunged by disintegration. In other words, furnish an animal with all the constituents of proto-

plasm in the exact proportion in which they occur, and in a combination scarcely differing in superficial appearance, and the animal cannot appropriate it as nutriment. It must have passed through the form of an organic or organizable body before it can be transformed into animal tissue, and this transmigration of matter through the vital processes endows it with properties that it retains for a considerable period, and never wholly forgets, perhaps. For this reason the development of vibriones on the surface of an animal infusion, so guarded as to exclude the possible introduction of the minute particles of protoplasm always floating in the atmosphere, would constitute no solution of the conditions of life. The only experiment that would settle this problem beyond dispute would be the unquestionable production in the laboratory, from forms of matter known not to have been thus digested, of the primordial living body known as protoplasm, and the test of its potentiality as such would be its spontaneous organization into cells. This would unlock the conditions of the mystery of life, but it would not add any thing to what is now known as to the essential nature of vital operations.

Whatever views the individual may entertain concerning the great problem of mind and its relation to matter, or the great mysteries of the soul and of destiny hereafter, in strict physiology, consciousness and volition, sensation and cognition, imagination and conscience must be regarded as phenomena of neurility, and as referring themselves to this primary function of nervous tissue. The real question is not whether the physiologists are correct in disregarding the higher philosophical and theological aspects of life, but whether subject (within the meaning of Hegel) shall be considered as the highest potentiality. Mind and matter are in ultimate analysis pure potentialities, the one just as unknowable in its essential and absolute being as the other; and, while from the strictly physiological stand-point the former is observed to have its origin in nervous function and to depend for its sanity of action upon the integrity of nervous function, from the higher stand-point of philosophy it is perceived to be potential

in the laws that govern organization and to have higher ends in view, through cycles on cycles of progressive evolution, from the *protagenes primordialis*, a non-nucleated cell, to man, with the higher psychical phenomena he presents. This, however, may as well be admitted first as last, that, while, since Kant, metaphysicians have added nothing whatever to the science of psychology, except ponderous volumes, the physiologists, and notably the medical psychologists, have contributed fact upon fact to the data for elaborating an exact and comprehensive system; so that, of all the text-books now in use in American colleges, it may be safely asserted that not one of them is worth the trouble of a perusal, except as a curiosity of inexact and wandering speculation. Equally inexact, also, is the ponderous treatise of Herbert Spencer, though from a different attitude, for the integrity of consciousness as a starting-point now rests upon unquestionable facts of structure and function, and can be no longer debated.

But, before any comprehensive system can be elaborated, a new definition of life must take the place of the floating and indefinite ones that have so far been proposed, and that generally express but one aspect of it, ignoring its essential nature wholly, and emphasizing a single point of view to the exclusion of all others. When Schelling styles it the tendency to individuation, he is quite correct from his point of view; when Cuvier says it is the *ensemble* of functions that resist death, he is equally correct from his, although the definition is extremely negative. De Candolle is equally in the right when he regards it as the transformation of physical into plastic or nervous forces; Spencer is true to his theory and to one aspect in his definition; so is Kant, when, with the penetrating insight peculiar to him, he defines life as self-aim, and so is Hegel, in the rambling and incoherent collection of words, in which he tries to express what Kant has so clearly put in the two curt syllables, *Selbst-zweck*. "An organic product of nature," says Kant, "is that in which all is aim and reciprocally also means." "Life," says Hegel, with the mistiness of the metaphysical dreamer, "is a means, not for

something else, but for the idea of life, and continually reproduces its infinite form." Of all the definitions that have so far been offered, that of Aristotle is, perhaps, the most comprehensive and most universal in its application. "Life," says the acutest logician and thinker of ancient Greece, "is a nourishing growth, and decay through self." The pertinacity with which life baffles definition may be profitably studied in Coleridge's review of Schelling, in which, in his profoundest and most unsatisfactory paper, except that on the imagination, he addresses himself to the discussion of the German idealists' theory of life, and succeeds in showing its inadequacy, but lamentably fails in the attempt to frame a new and more comprehensive one.

It is here that modern histology comes to the rescue of the thinker and generalizer, and this is one of the most important biological relations of the cell-theory. With all its varieties of tissue and function, in ultimate histological analysis, life resolves itself into protoplasm as regards its physical basis, and into the cell as regards its morphological unit. In this, its least complex aspect, it presents itself as a simple, appropriative, transformative, and assimilative activity, self-maintaining and self-organizing; and this trait it preserves through all successive differentiations as the source of every variety of vital function. In man and in the amœba, the process is the same, the protoplasmic constitution the same. Through all its complexities of organization life is one. A cell from the brain of a Hegel or a Kant is a simple nucleated cell of protoplasm, but one subordinated to a higher self-activity than that which appears in unicellular organisms. By way of introduction to this paper, the reader has been put in possession of the causes that would contribute to the differentiation of the first nerve-cell, and of the tendency in protoplasmic bodies (to put forth processes) that would result in a rudimentary nervous system. It is strictly correct, therefore, to regard life as self-activity, and as proceeding through various transformations of structure and function, always with the same molecular basis, from self-activity to self-consciousness; and, as the self-principle is

the one constant fact, from amœba to man, it is obvious that Hegel's definition, dreamer though he was, is decidedly more scientific in its terms than that of Herbert Spencer. As Herbert assumes, as the basis of his system of rational psychology, it is important that the internal culture of life should be expressed in its scientific definition, for the internal culture, with its possibilities of acquiring habitat and of perpetuating it, is that which renders life self-organizing and adjustable to external relations, and that in which it differs from inorganic products. This internal culture is, however, but another expression for self-activity. In the perfectly-developed cell—the brain-cell, for example—the protoplasmic centre (or endoplast) performs the same office of maintaining this self-activity as an ultimate vital fact that it performs in an infusorium, while the formed material (or periplast) is the seat of a higher self-activity; but both in its material substratum and in its internal culture life is always the same. It is untrue to physiology to say, as Dr. Brown-Séquard has done, that all tissues are endowed with forms of life peculiar to themselves, for the life of all tissues is identical, and it is in the periplast, not living matter within the meaning of that term as employed by Dr. Beale, that functional differentiation commences.

If, now, the points developed in the preceding paragraph are further applied, and pushed into the domain of force, as distinguished from extension, it will be evident at a glance that life is a form of force, and not a co-ordination of forces, although other forces are co-ordinated with it and by it in the organic functions. It is quite obvious that scientific men have been premature in rejecting the idea that life is a force, as unique and distinctive as electricity or magnetism, light or heat. All these forces are only exponents of molecular agitation, that is to say, forms of molecular force, which constitutes the last induction of science in this important direction, and is the pivot about which all other forces and energies revolve. The more deeply the scientific investigator penetrates the processes of organism, the more unquestion-

ably certain becomes the fact that the electrical and magnetic phenomena observed in organic structures are simply the results of molecular transformations going on under the control of the *vis essentialis* (or life) of the organism; and the same may be said of animal heat, although the relation of heat to life is more intimate than that of other forces, light excepted. They are not causes, but effects. The same volume of molecular transformation could not take place in an inorganic body, without liberating as its exponents an equal volume of these forces, which are everywhere and under all circumstances the exponents of molecular metamorphoses.

The best definition of life from this point of view is, therefore, that of molecular force realizing itself in consciousness; and this is a definition that will bear the keenest scrutiny of physicists on the one hand, and satisfy the most pressing requisitions of metaphysicians on the other. But what molecular force is, save that it is the ground of all other forces, the physicist cannot pretend to say. It is the nearest and most intimate approximation to the unknown potentiality that the material sciences permit to their votaries—the ultimate link between natural phenomena and the Absolute Being of the speculative philosophers, equally related to subject and object, and alike potent in light, in heat, in magnetism and electricity, in life and consciousness, though in the two latter, which are really but one when properly viewed, it appears to preserve itself more nearly under its primitive form.

This is one of the inductions of modern histology, and one that renders a reconciliation between science and religion possible. It is of very trifling consequence what definition of matter may be adopted, whether that of Dr. Tyndall, or that which regards matter as the mere formal substratum of phenomena; but it is of the utmost importance that the definition of life, as a starting-point for all psychological and teleological doctrines, should be distinct and comprehensive.

ART. VI.—1. *The Works of Confucius*, containing the original text with a translation. By J. MARSHMAN. Serampore. 1809.

2. *The Chinese Classics, containing the Confucian Analects, the Great Learning, and the Doctrine of the Mean.* By JAMES LEGGE, D.D. Hong Kong. 1861.

3. *The Four Books.* Translated into English by Rev. DAVID COLLIE. Malacca. 1828.

4. *Memoires Historiques sur Confucius et Zoroastre.* De Bock.

5. *Abrègé Historique des principaux traits de la Vie de Confucius.* HOLMAN.

6. *Yu le Grand et Confucius.* M. CLERC. Paris. 1769.

7. *The Middle Kingdom. A Survey of the Geography, Government, Social Life, Arts, Religion, etc., of the Chinese.* By S. WELLS WILLIAMS, LL. D. New York and London. 1848.

THERE exists in our day a nation whose origin is as complete a mystery as that of any race of by-gone ages; a people whose traditions carry them into imaginary ages prior to the creation of the world, and who are positively known to have existed more than two thousand years before the Christian era;* a nation which for upward of four thousand years has been governed by its own princes and with little deviation from the institutes of its first legislator; and which, more than five hundred years before Christ, produced a sage, the originator of a system of philosophy the oldest extant, and enlightened beyond many of later and more advanced eras. Whence had this nation—for centuries secluded in the middle kingdom, and holding little or no intercourse, either by land or sea, with the other inhabitants of the earth—the elements of permanency, prosperity, and cultivation, which have maintained it in its place while empires around it rose, flourished,

* An eclipse, which occurred in the year B. C. 2155, is mentioned in the Chinese histories, and astronomical observations extracted therefrom and published, A. D. 1729.

and fell? The answer to this question may, to no inconsiderable extent, be found in the career, writings, and philosophy of one individual—the sage Confucius.

K'ung Foo-tsze—the Master K'ung—of which appellation Confucius is a Latinized version—while numbering a progeny which two hundred years ago exceeded eleven thousand males*—has been credited by tradition with a genealogy of proportionate extent, tracing back to Hwang-te, the inventor of the cycle B. C. 2637.† In fact, however, nothing authentic can be affirmed of his ancestry prior to the commencement of the Tcheou dynasty, B. C. 1121. The first of his ancestors of whom we have positive record is commemorated by the sage himself in the book of the analects known as Wei-tsze—the Chief of Wei.

> The Chief of Wei withdrew from the court; the Chief of K'e became a slave to Tcheou; Pe-kan remonstrated with him and died. Confucius said, The Yin Dynasty possessed these *three* men of virtue—*Ana.*, Book XVIII., ch. i.

This chief of Wei was the founder of the sage's family. An elder brother (by a concubine) of the tyrant Tcheou, he left the court, that he might preserve the sacrifices of the family intact amid the ruin which he saw impending.‡ He was subsequently invested by the emperor Tching-wang—the second of the house of Tcheou—with the dukedom of Sung, that he might there continue the sacrifices to the emperors of the Yin dynasty. In the regular line of succession this dukedom would have descended to Confucius, but in 893 B. C., it passed from them by the resignation of Fuh-ho, the progenitor of the sage, in favor of his younger brother.

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* The present Regent and Prime Minister of China—the Prince K'ung—is of the family of Confucius.

† Memoires concernant les Chinois, tome xii., p. 447, *et seq.*

‡ The chiefs of K'e and Pe-kan were uncles of the tyrant. The former was thrown into prison by Tcheou, and to escape death feigned madness and was used by the tyrant as a buffoon. Pe-kan was barbarously put to death. Tcheou having the heart torn out, that he might inspect, he said, a sage's heart.—*Duhalde*, vol. i., p. 312.

When five generations had elapsed since the resignation of Fuh-ho, it became necessary, by the customs of the country, that the branch should cease its connection with the ducal stem, and merge among the people under a new surname. The representative of the family was, at this time, K'ung foo Kea, master of the horse in Sung, and from him originated the family name which was born by the great sage. Confucius, however, was not a native of Sung, a deadly feud with another powerful family having caused the K'ung to remove to the city of Fang, in the State of Loo, in which city the sage was born about the year B. C. 561.

As usual, with the great men of antiquity, the circumstances of Confucius's birth are encompassed with a cloud of fable; but fables so essentially prosaic, so devoid of beauty or interest as to be utterly unworthy of record. Of definite facts in regard to his early life we possess but few. When he was three years of age, his father died, leaving his family, it would appear, in poverty. Confucius says of himself:

"When I was young, my condition was low; and therefore I acquired my ability in many things, but they were mean matters. Having no official employment, I acquired many arts."—*Ana.*, ix., 6.

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"At fifteen, I bent my mind to learning; at thirty, I stood firm; at forty, I had no doubts; at fifty, I knew the decrees of Heaven; at sixty, my ear was an obedient order for the reception of truth; at seventy, I could follow out what my heart desired without transgressing what was right."—*Ana.*, ii., 4.

This is nearly all that we know of the sage until his marriage at the age of nineteen to a lady of the K'een K'wan family. Of the issue of this marriage we have little information except that the eldest son was called Le, signifying a carp, from a present sent to the sage by the Duke Tcha-'ou, on the occasion of the child's birth. The analects tell us that Confucius had also a daughter whom he gave in marriage to one King-Yay *—but of the name of this daughter we have no record.

* *Ana.*, vi., 1.

At the time when Confucius commenced his career, the Chinese Empire was divided into a number of petty principalities or duchies, owning a nominal allegiance to the central authority, but practically independent and continually at feud with one another. There were thirteen principalities of note, and numerous smaller dependencies. The chiefs, not unlike the feudal barons of the middle-ages in Europe, made war on one another, and were virtually sovereigns in their own provinces. These chiefs were generally surrounded by hereditary ministerial families, who, in many instances, governed their nominal rulers, and were in turn encroached upon by their own constituents and dependents. Thus the provinces were, to a great extent, controlled by oligarchies of the worst kind. This was, pre-eminently, the case with Confucius's native State of Loo, in which three families, known as the K'e, the Shuh, and the Ming,* kept the ducal house in a state of absolute dependence.†

The earliest public employment of the future sage was in his native principality, as keeper of the stores of grain, whence in the following year he was promoted to the charge of the public fields and lands.‡ These functions he appears to have discharged as a means of support, without thought of advancement or distinction, saying, when he undertook the first: "My calculations must all be right; that is all that I have to care about;" and when he assumed the second, observing: "The oxen and sheep must be fat, and strong, and superior; that is all that I have to care about."§ In these sayings we find a key to the real character and objects of the sage—namely, the disposition to fulfill honorably his duty in whatever station of life his lot should be cast. He said of himself:

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* Confucius was himself connected with the K'e family; and his disciples Ho-ke and King Shuh with the Ming, possibly also with the K'e and Shuh.

† Legge, pp. 64, 67. Prolegomena. ‡ Amyot, vol. xii., p. 24.

§ Mencius V., Part ii., v. 4.

"With coarse rice to eat, with water to drink, and my bended arm for a pillow, I have still joy in the midst of these things. Riches and honors acquired by unrighteousness are to me a floating cloud."—*Ana.*, vii., 15.

Such a man, however, could not long remain in comparative obscurity. In his twenty-second year he was able to follow the real bent of his inclinations in devoting himself to the instruction of youth. This was with him a labor rather of love than of profit. Where he could discover in the disciple capacity and willingness to learn, he was contented with whatever emolument might come within his means; or, to use his own words:

"From the man who brought his bundle of dried flesh for my teaching upwards, I never refused instruction to any one."—*Ana.*, vii., 7.

His teaching, however, was only for those who showed an ability and disposition to profit by it. He adds:

"I do not open up the truth to one who is not eager to get knowledge, nor help out any one who is not anxious to explain himself. When I have presented one corner of a subject to any one, and he cannot from it learn the other three, I do not repeat my lesson."—*Ana.*, vii., 8.

He was, however, an accurate judge of the capacity of his pupils. Of H'wuy-Yen, a favorite disciple, he said:

"I have talked with H'wuy a whole day, and he has made no objection to any thing I said—as if he were stupid. He has retired, and I have examined his conduct when away from me, and found him able to illustrate my teachings. H'wuy! he is not stupid."—*Ana.*, ii., 9.

It may well be imagined that he soon gathered around him an earnest and attached band of disciples.* These he inspired with such reverence that they made notes of his sayings, even in ordinary conversation; and from this source

* Confucius divisa sa doctrine en quatre parties, et ses disciples dans un pareil nombre de classes. La premiére ordre était de ceux qui s'étudiaient à acquérir les vertus; la seconde classe était de ceux qui apprenaient l'art de raisonner juste et l'éloquence; dans la troisiéme classe on traitait du gouvernement de l'État, et des devoirs des magistrats; la quatriéme classe s'occupait à discourir noblement et d'une maniére propre à persuader sur tout ce qui regarde des moeurs et des usages civiles.—*Yu le Grand et Confucius*, p. 113.

have been compiled the analects—in the native tongue Lung-yu—Speeches and Replies—which present so vivid a portraiture of the sage, his principles, teachings, and daily life. These disciples assisted him in rendering the last tribute of respect to his mother, who died in the year B. C. 528, when Confucius was twenty-five years of age. He desired that a resting-place should be prepared for her at Fang, the first home of the K'ung in Loo, and that his father's remains should repose beside her's. But a conscientious scruple arose in his mind as to the propriety of disturbing his father's bones. Ascertaining, however, that their present interment was never intended to be more than temporary, he removed the coffin and deposited it beside that of his mother, in one grave, at Fang. He wished to raise a mound or tumulus over them, but the intense veneration for established usages and past traditions, which appears so conspicuously in his writings, induced him to hesitate. Finally he said:

"In old times they had graves, but raised no tumulus over them. But I am a man who belongs equally to the north and the south, the east and the west. I must have something by which I can remember the place."

Accordingly he raised a mound four feet high over the graves. His disciples undertook its completion, but a storm of rain having destroyed their work they returned to their master with the words, "The grave in Fang fell down." Confucius wept. "Alas!" he said, "they made not thus their graves in antiquity." *

This touching incident presents to us the sage in his daily life, his strength and his weakness. Of an affectionate nature, he desires to honor the remains of his parents; but, regarding ancient usages as immutable, he has not courage to attempt an innovation for their sakes. This exaggerated reverence for precedent and usage will be found to have acted as a dead weight on no small part of his career and teachings. Finally his reason comes to his aid. He says: "I am not a citizen of any one place. Why should I be bound slavishly by the tra-

* Le Ke, II., Part I., i., 10.

ditions of Loo?" Accordingly he puts into execution his pious project; but, when it is frustrated by natural causes, he sees in this result an evidence of divine displeasure, and resolves henceforth to yield a blind obedience to the voice of tradition.

The name of Confucius was gradually becoming extensively known in the province, and persons of rank came to seek his instructions. When he was thirty-four years of age, an event occurred which was the means of greatly enlarging his sphere of usefulness. His reputation having reached the ears of Ming-Ho, one of the principal ministers of Loo, that functionary on his death-bed charged his son Ho-ke (called in the analects Ming-E), to go and study proprieties under him. Accordingly the minister's son, together with a brother King-shuh, were added to the number of the sage's disciples.*

Confucius had long been desirous of visiting the court of Tcheou, and conferring on the subject of ceremonies with Laou, the chief of the neighboring State of T'an, who was then at court, and whose learning on these abstruse subjects was said to be marvellous. This wish he was now enabled to carry into effect through the influence of his new disciple, King-shuh.

Arriving at the city of Loo in the province of Ho-nan, where the imperial court was then held, the sage maintained little intercourse with the court, but occupied himself with the instructions of Laou-Tan—otherwise called Laou-tsze or the Master Laou—on the ceremonies and maxims of the founders of the dynasty. Of their conversations but slight record is preserved, but in them we may presume was laid the foundation of much of the wisdom which Confucius has recorded in the Five Books, especially in the Shoo-king and the Le-ke. Laou-tsze appears to have impressed Confucius with the most intense veneration, while his own deportment was overbearing and indeed supercilious.† Yet has the philosophy

* Amyot, vol. xii., p. 59.

† Sze-ma Ts'een. Amyot, vol. xii., p. 68.

of that master borne no such fruit as the teaching of Confucius, nor enured in like manner to the benefit of posterity. Laou-tsze was the founder of the school or religion of Ta'ou, one of the two creeds held in opposition to that of Confucius; the other being Buddhism or the religion of Fo. Laou-tsze was a transcendental philosopher, whose system was based on the existence of an absolute, spiritual, and impersonal being, to whom he gave the name of Taou or the Way. According to his teaching, virtue and happiness were to be sought in an intimate union with that Being, and the extinction, as far as possible, of human appetites and passions. The religion still exists, but has been degraded into a low form of superstition, whose adherents are held in contempt by the educated classes in China.

Confucius did not remain long at the Court, but returned within the year to Loo, and resumed his work of teaching. His visit, however, had widely extended his fame. Disciples came to hear him from all parts of the empire until their number exceeded three thousand.* He was not destined to remain much longer a simple instructor of youth. An event was at hand which would render him the adviser of princes.

The three families who virtually governed Loo had been steadily increasing in their usurpations until they aspired to almost royal prerogatives. Confucius often rebuked their assumptions. When the head of the K'e family, in emulation of imperial privileges, caused eight rows of pantomimists to stand before him in the temple services instead of four, the highest number permitted to a grand officer, the sage remarked sadly, "If he can bear to do this, what may he not bear to do?" When the three families used the Yung Ode, which was intended to be sung only in the imperial temples, Confucius ironically quoted the words of the Ode, "Assisting are the princes—the emperor looks profound and grave," and inquired, "What application can these words have in the halls of the three families?" † But when the K'e chief presumed

* Legge, 67, *Prolegomena.* † *Ana.*, iii., 1, 2.

to sacrifice on the T'ae Mountain, where emperors and princes were alone permitted by the ritual to sacrifice, the sage felt that confusion was nigh at hand. In the year B. C. 516—the year succeeding the return to Loo—the three families rose against the duke Ch'aou, and, having expelled him from Loo, administered the government in his name. The duke sought refuge in T'se, the State adjoining Loo on the north. Hither Confucius followed him unwilling to witness the disorders of his native State.

The duke King—as he was called—of T'se was a man of little merit, as we gather from the incidental words of Confucius that, on the day of his death, the people did not praise him for a single virtue.* He appears, however, to have been impressed with the wisdom of Confucius; for he sent for him and consulted him on the principles of government, and was so well pleased with his answers that he offered to assign to him the town of Lin-k'ew with its revenues. But Confucius declined the offer, saying, "A superior man will receive reward only for services which he has done. I have given advice to the duke King, but he has not received it."

The duke King was at this time so completely under the influence of his ministers as to have seriously entertained the idea suggested by them of setting aside his eldest son from the succession. Among the questions propounded by him to Confucius was this: "What is government?" The sage replied, "There is government when the prince is prince, and the minister is minister; when the father is father, and the son is son." The duke King felt the implied rebuke, and answered, "If, indeed, the prince be not prince and the minister not minister; the father not father and the son not son; although I have the grain, shall I be able to eat it?"

The duke King for awhile constantly sought Confucius for advice, and, by way of retaining him permanently in his state, proposed to assign to him the fields of Ne-k'e. The jealousy of his ministers prevented the fulfilment of this pur-

* *Ana.*, xvi., 12.

pose, and eventually the fickle duke became tired of so uncompromising a monitor, and said, "I am old, I cannot use his doctrines." These and other remarks intended directly to wound the sage induced him to take his departure.*

He returned to Loo, where for fifteen years he remained without official employment, devoting himself to instruction. The three families still maintained sway in Loo, and on the death of the duke Ch'aou set aside the rightful heir, and substituted another member of the family of the name of T'ing, in whose name they continued to govern. But the chiefs of these families were themselves controlled and oppressed by their officers, who carried their annoyance to such an extent that Yang-Ho, the most powerful among them, actually held his chief Ke-Hwan a prisoner, and only released him on obtaining a promise of absolute obedience to his will. This Ho was anxious to avail himself of the services of Confucius; but the sage firmly refused to countenance him or any of the usurpers. This period he devoted to researches into the poetry, history, ceremonies, and music of the empire, to the instruction of his disciples, and to the compilation of some of the great works which have rendered him famous.

These productions are commonly classified in two series, —the U-king or Five Canons, and the Sse-shu or Four Books—although, in fact, of the Five Canons three are rather compilations than original works; while the Four Books, although consisting chiefly of the wisdom of Confucius, were put into form by his disciples, and the last by a disciple of his grandson.

The term U-king or Five Canons is commonly understood by the Chinese to contain the idea of fundamental, unalterable, and sublime doctrines. The first, known as the Yih-king or Canon of Changes, is said to be the oldest in the world. The Chinese attribute its authorship to Fo-hi, the oldest of their recognized emperors, who reigned about 2800 B. C., but to Confucius is due the credit of collecting, arranging, and an-

* *Ana.*, xviii., 3.

notating it. The original work is simply a collection of figures, made up of straight lines in combinations representing the Li-ang-y—or "both principles"—the male or active principle (*yin*) symbolized by an unbroken horizontal line, and the female or passive (*yang*) by a broken parallel; also *pa-kua*, or diagrams, eight in number, emblematic of the natural forces, and sixty-four emblems in as many chapters. These oracular hieroglyphics—a species of Sibylline leaves—Confucius expounded and developed into a cosmic philosophy—explaining the cosmogony from *yin* and *yang*, geomancy, logomancy, and divination. They form, in fact, under his development, the fundamental idea of Feng-shui, the prevailing principle which controls the every action of the natives of the Celestial Empire.

Feng-Shui has long been the puzzle of European residents in China. It is the principle which is given as a reason for every act of opposition to modern improvements, and which commands the devotion of the Chinese to such an extent that they will commit murder to avenge its neglect. Yet the generality of them can give no better definition of Feng-Shui than that it means "wind and water," and is so called "because it is a thing like wind, which you cannot comprehend, and a thing like water, which you cannot grasp."*

This Feng-Shui is, however, nothing more than the development of the principles enunciated in the Yih-king, and expounded by Confucius. It assumes the existenc e of one absolute principle or monad called "The Great Absolute." When in motion, it produces the great male principle, *yin*; when at rest, the great female, *yang*. Through *yin* and *yang* the universe is evolved. They also form distinct elements in the human soul—the male, or spiritual, and the female, or animal. After death the male principle ascends into heaven, whence it watches over the welfare of its descendants; the female dwells with the body in the tomb, where, according as

* *Feng-Shui; or the Rudiments of Natural Science in China.* By Ernest J. Estel. Hong Kong. 1873.

it is well or ill tended, will the male or spiritual influence be propitious. Therefore, Feng-Shui requires the tombs of the deceased to be on specially fortunate ground, where there shall be a proper combination of male and female, the male being represented by hilly country, the female by gently undulating ground. At the junction of these two grounds, where they form a bend like the elbow of a man's arm, is the propitious site for tombs and also for cities. Such a site has been chosen for the city of Canton.

The Yih-king, as expounded by Confucius, sets forth all these ideas in the shape of diagrams. From the straight or male line and the broken or female, it forms combinations called Li-ang-y. One combination or diagram ⚌ is called the great male; another ䷁ the great female; a third ䷂ the little male; a fourth ䷇ the little female. The great male diagram is expounded as a symbol for the sun, the heat, the intellect, the eyes, etc.; the great female for the planets, the night, the body, the mouth, etc.; the little male for the moon, the cold, the passions, the ears, etc.; the little female for the stars, the daylight, the form, the nose, etc. These four are combined in the Yih-king into eight diagrams which the commentator explains as follows: 1 ☰ stands for heaven and points to the south; 2 ☷ stands for earth and points to the north; 3 ☲ in the east signifies fire, "for, says the Yih-king, "in drying up the myriad of things there is nothing more parching than fire;" 4 ☵ in the west represents water, "for in moistening the myriad of things, there is nothing more humid than water;" 5 ☴ in the south-west represents the wind, "for in twisting round the myriad of things there is nothing more effective than wind;" 6 ☳ in the north-east denotes thunder, "for in agitating the myriad of things there is nothing more rapid than thunder;" 7 ☱ in the south-east represents the ocean, "for in satisfying the myriad of things there is nothing more gratifying than the ocean;" 8 ☶ in the north-west signifies mountains, "for in bringing to a conclusion and again commencing the myriad of things there is nothing more perfect than the mountains."

"Thus," says the Yih-king, "water and fire overtaking and blending with each other, thunder and wind not opposing one another, and the mountains and oceans being pervaded with the same breath, Nature can perform her transformations and complete and perfect the myriad of things."

The Yih-king further combined these diagrams into sixty-four, each having a special name, special meaning, and occult virtue attached. This whole system of diagrams on which the Yih-king is founded—a system which the Chinese tradition represented Fo-hi to have derived from the marks on the back of a dragon horse which appeared to him from the river—however childish it may seem to modern notions, was undoubtedly of great utility in those early days in imparting and fixing in the minds of the Chinese the knowledge of astronomy and physics which they possess. In this manner, Confucius by collecting and expounding the work proved an unquestionable benefactor to his race.

The system of Feng-Shui, however, of which this work is considered the chief authority, has proved the principal obstacle to the progress of modern China, and to the introduction of modern civilization within its borders. Every thing is sacrificed to the requirements of Feng-Shui, which prescribes authoritatively the location of houses and tombs, the course of roads, the position of cities, in fact, every arrangement of a public or private nature. There is no reason to suppose that Confucius was himself affected with the Feng-Shui superstition. But the analogies which its adherents found in the Yih-king gave it a respectability and authority in the public mind, which the sage and his disciples, concerning themselves principally with morality, saying little of religion, and refusing to grapple with the old superstition, took no pains to counteract. Consequently, the superstition, which was caught up with great avidity by the Taou-ists and other religionists, spread throughout the empire and took deep, and to the present time ineradicable, root in the minds of the people; to such an extent that even the educated Confucians of our present day, while affecting to despise it, in their own homes regulate every

domestic affair in accordance with its most approved canons. Thus the greatest sage of that country and age furnished, unconsciously, or through indifference, the materials for a superstition the most absorbing of the day, and which continues to fetter the intellects and repress the progress of the people even to the present time.

The Shoo-king, or Canon of History, is the second of the U-king, and is generally considered the most important of the series. This work consists of the annals of the emperors from the earliest days to within two hundred years of Confucius's own time,* and, although principally compiled from fragmentary works then existing, may in its digested form be considered as the sage's own production. It represents not only the history, but the wisdom, the decrees, the opinions of the emperors in those days when they were supposed to represent the wisdom and virtue of the people. It further describes their empire and laws of government, and contains vows to Shang-Ti, the Supreme Being. It is therefore essentially a book of practical instruction, and might almost be called the Bible of the Chinese. From this work Confucius was in the practice of deducing many of his instructions to his disciples. His answers to interrogatories propounded, were not unfrequently "What does the Shoo-king say?"†

The Third Book, called the She-king, or Canon of Poetry, is a collection made by Confucius of such chants, partly of a religious character, partly expressive of moral sentiments, partly adapted to private occasions, such as harvesting, marriage, etc., as were held in most esteem among the Chinese. They are distributed into four chapters, viz., the Kew-fang or national hymns; the Siao-ya or minor eulogies; the Ta-ya or great eulogies; and the T'sing or imperial sacrifices. These productions will not impress the modern reader with their poetic merit. They are extremely irregular—the lines of un-

* From Y'ao, 2357 B. C. to Ping-Wan, 750 B. C.

† *Ana.*, ii., 21, xiv., 43, xx., 1, which last is a direct compilation from parts of the Shoo-king.

equal length—sometimes exhibiting triple rhymes—at others none at all. But it is not by its literary merits that the She-king is estimated in China. Among the Five Canons it holds much the same rank as the Book of Psalms does in the Old Testament. Its precepts are constantly quoted and are received with the same reverence that the Chinese pay to the other Canons. Confucius himself did not quote this book so frequently as the Shoo-king; but he strongly recommended its study.* Subsequent writers—such as T'sang-t'se in his commentaries on "The Great Learning," and Tsze-sze, in his contributions to "The Immutable Medium"—dwell perpetually on its sayings, and use them, in fact, as the chief texts of their discourses.

The Le-ke—record of rites, or mirror of moralities—is, after the Shoo-king, the most frequently cited of the Five Canons. Of this work, Confucius undoubtedly furnished the greater portion of the text, but it was for the most part compiled from his oral teachings, and did not appear in its present form until some centuries after his death. It is, however, a work essentially Confucian—recording the teachings of the sage as to every action at every period of life; and is still the oracle of the Pe-king Board of Rites, and of the Six Boards of Governmental Diplomacy, as well as the basis of the religion of the cultivated Chinese.†

The last of the Five Canons—Chiun-T'sieu, or Spring and Autumn—is the only one whose authorship may be attributed throughout to Confucius's own hand. This was written by him as a continuation of the Shoo-king, and is a sort of annual register or chronicle of events from 731 B. C. to

* See *Ana.*, xvii., 9.

† A portion of the Le-ke was undoubtedly extant in Confucius's days, and known as the Rules of Propriety. To the study of this book, as well as of the odes (from which he compiled the She-king), Confucius attached the greatest importance, saying to his son Le—"If you do not learn the Odes, you will not be fit to converse with. If you do not learn the Rules of Propriety, your character cannot be established."—*Ana.*, xvi., 13.

560 B. C., drawn from memoranda existing in his native region.

Confucius also wrote himself or dictated to his disciple, T'sang-tsae, two supplementary works known as Heaou-king or Canon of Filial Piety, a collection of apothegms and conversations between the sage and T'sang-tsae, much in the style of the Confucian analects, and Syan-hyo, or Science for Children, which was chiefly a compilation from various writers. These books are sometimes called The Sixth Canon.

These six books are called King, a word signifying the warp or thread of a web,* and which has been applied metaphorically to denote works of authority. The Five King means the Five Canonical Books, containing the truth on the highest subjects from the sages of China, and to be received as a code of established law.

The remaining set of Chinese classics, although not written by Confucius, nor in fact appearing until after his death, are so intimately connected with his teachings that an account of the sage would not be complete without some mention of them. This second series is known by the name of the Sse-Shoo, or Four Books, meaning the Books of the Four Philosophers—*i. e.*, Confucius, T'sang-Sin, K'ung-Keih, and Meng-tsze, or Mencius.† The first of these books—called Lun-yu, or Speeches and Replies—has been already referred to under its more familiar title of The Confucian Analects. This, like Coleridge's Table Talk, is a collection of the sage's sayings, committed to memory by his disciples, and furnishes interesting glimpses of his life and character as well as of his teachings. They form a collection of proverbial philosophy second to that of no uninspired author. Some of these utterances are the more remarkable as they at times foreshadow, though dimly, the teachings of the Gospels. Such, for example, is the principle of the Golden Rule,

* Legge, p. 1, prolegomena.

† T'sang-Sin and K'ung-Keih were disciples of Confucius; the latter was also his grandson. Meng-tsze was a disciple of K'ung-keih.

which, in a negative form, was enunciated by Confucius as follows:

"Tsze-Kung asked, saying: 'Is there one word which may serve as a rule of practice for all one's life?' The master said: 'Is not reciprocity such a word? What you do not want done to yourself do not do to others.'"—*Ana.*, xv., 23.

In another place he says:

"The superior man holds righteousness to be of the highest importance. A man in a superior situation, having valor without righteousness, will be guilty of insubordination; one of the lower people, having valor without righteousness, will commit robbery."—*Ana.*, xvii., 23.

Does not this recall Solomon's "Righteousness exalteth a nation, but sin is a reproach to any people?"

The second of the series—the Ta-hio or Great Learning—is attributed to T'sang-Sin, a disciple of Confucius; but Choo-he, the compiler, states in the introduction that it is a book left by Confucius himself. A certain portion of it was at one time included in the Le-ke; and this, which constitutes the first chapter of the work, is generally understood to be all that was in the original text of Confucius. The remaining ten chapters are said to be the commentaries of T'sang. Like Coke upon Littleton, the commentaries vastly exceed the text. But the chief value of the work is in the germ furnished by the sage. So highly was this book esteemed among the Chinese philosophers, that it was called the gate by which learners enter into virtue. To a modern reader much of it will appear vague and commonplace; yet there is profound wisdom in the fundamental principle enunciated by the sage.

"The ancients, who wished to illustrate illustrious virtue throughout the empire, first ordered well their own states. Wishing to order well their states, they first regulated their families. Wishing to regulate their families, they first cultivated their persons. Wishing to cultivate their persons, they first rectified their hearts. Wishing to rectify their hearts, they first sought to be sincere in their thoughts. Wishing to be sincere in their thoughts, they first extended to the utmost their knowledge. Such extension of knowledge lay in the investigation of things."—Ta-hio, 4.

The Ching-Yung or "Immutable Medium," which is the third volume of the series, is in like manner represented as a compilation of principles which had been delivered orally by Confucius to his disciples, and transmitted in the same mode, until Tsze-sze, another name for K'ung-Keih, the grandson of Confucius, committed them to writing. Like the analects, it prefaces every aphorism with "The Master said," or "Chung-ne said," showing that it consists, or is supposed to consist, substantially of the wisdom of the sage himself. Tsze-sze or K'ung Keih has added extensive commentaries and illustrations. Of its value there are different opinions. The compiler Choo-he, in the preface, describes it in the following exalted terms:

"This book first speaks of one principle; it next spreads this out, and embraces all things; finally it returns and gathers them all up under the one principle. Unroll it, and it fills the universe; roll it up and it retires and lies hid in mysteriousness. The relish of it is inexhaustible. The whole of it is solid learning. When the skillful reader has explored it with delight till he has apprehended it, he may carry it into practice all his life, and will find that it cannot be exhausted."

Other commentators have regarded it with less favor. While containing many valuable moral maxims and much of the traditional wisdom of Confucius, it considerably weakens their effect by the intermixture of Tsze-sze's own views which are remarkable rather for extravagance than accuracy. The objects of its teaching are involved in a cloud of verbiage which it is difficult to penetrate; and a large portion of it consists of little more than a eulogy on the national sages, and especially of Confucius, of whom Tsze-sze says:

"All embracing and vast, he is like Heaven. Deep and earnest as a fountain, he is like the abyss. All who have blood and breath unfeignedly honor and love him. Hence it is said, 'He is the equal of Heaven.' Call him man in his ideal, how earnest is he! Call him an abyss, how deep is he! Call him Heaven, how vast is he!"—Chs. xxxi., xxxii.*

*This extravagant tone of laudation, however characteristic of the period when these commentaries were written, by no means indicates the estimation in which Confucius was held in his life-time. Like most

It is impossible not to contrast all this laudation with the profound humility of Confucius himself, when he said, "the way of the superior man is threefold; but I am not equal to it." *

The last of the Four Books contains the works of Meng-tse or Mencius, a disciple of Tsze-sze, or K'ung-Keih, the author of the Ching-Yung. Of course, it is principally a development of Confucian ideas. Thus to this sage are Chinese scholars indebted for most of what is admirable in both their earlier and later classics.

ART. VII.—1. *Reports*, by VICTOR COUSIN, MATHEW ARNOLD, *and others, on the Educational Systems of Germany, France, etc.*

2. *Catalogues of Several Universities, Colleges, Academies, etc., Male and Female.*

MANY will ask, before finishing this article, will we never cease to criticise our educational institutions? We reply in advance that most probably we shall not—that, as long as we are able to write and publish, we must criticise. Yet we are not in the least cynical. None are less disposed than we to disparage American institutions of any kind. We certainly

great men it was only after his death that he began to be appreciated. By the time, however, that the Ching-Yung was published, the Chinese in their estimate of the sage had reached a pitch of idolatrous veneration, of which the foregoing extract is no exaggerated expression. M. Clerc, in his work on Confucius, gives us a specimen of the estimation of the sage entertained by the modern Chinese, which falls little short of the eulogies of the Ching-Yung.

"L'esprit de Confucius, disent les Chinois, était une flamme intérieure, qui cherchait des objets à qui s'attacher. Son âme, qui prenait fortement l'empreinte des choses qu'elle concevait, ne manquait jamais de se reproduire avec un nouveau caractère de vérité, de force et d'agrément, elle était semblable à ces miroirs métalliques qui concentrent en une seul point tous les rayons épais de la lumière."—*Yu le Grand et Confucius*, p. 103.

* *Ana*, xiv., 30.

have no ill-will toward those engaged in teaching. On the contrary, there is no other body with whom we sympathize more heartily, so far as we think they perform their duties intelligently and faithfully. There is not one even of those who have abused and vilified us, for exposing their ignorance and charlatanism, to whom we would do the slightest personal injury to-morrow, if it were in our power to do so.

Then, at no time have we overlooked the fact that, if we consulted our own interests, we should criticise rarely, or never. We were well aware, fifteen years ago, that if profit were our object, the way to secure it was not to criticise, but to praise. We knew that those whose motive was to make money, would undertake almost any enterprise for that purpose, if they had any knowledge of mankind, rather than attempt to establish a Quarterly Review. If our own common sense could not have taught us this, we had warnings enough before us in the failures of several Quarterlies published at different times in this city, and those failures were pointed out to us, with the kindest intentions, by several editors, and other literary friends, now no more.

In short, we were fully convinced that it would be vastly more profitable for us to publish a sort of catalogue, after the fashion of the auctioneers, containing the names and pretensions of all sorts of institutions, and in which the owner or head of each should have the privilege of setting forth its perfections, editorially, for a consideration proportioned to the number and size of the superlatives which the strength or weakness of his stomach prompted him to use. Institutions appearing in a work of this kind have, of course, no fault; all are equally perfect. Even the towns, villages, and cities in which they are situated are equally salubrious and attractive; so that all are exactly alike in surpassing excellence! It is no new discovery on our part that this is the sort of literature and science which nine-tenths of our "educators" like to patronize.

Nor has it failed to occur to us that we might profit from imitating the course of some of the newspapers in this respect;

that is, if, instead of making criticisms and instituting comparisons, which, of course, are "odious," we should present our readers such educational information as the following: "Prof. J. B. Onos, Ph. D., of Pottville University, is quartered at the St. Nicholas Hotel. The Rev. Tobias W. Caulis, D. D., Professor of Mental Philosophy at Hattieville College, has taken rooms at the Metropolitan. Prof. G. D. Amathes, of Pumpkinville, Ind., has accepted the chair of Sanscrit at Ourestown University, Pa. The Rev. Dr. Erasmus L. Pithon, now occupying the chair of Natural Sciences at Nancytown Seminary, has been invited to fill the presidential chair of Borealis College, Johnsonville, Mo. The University of Tompkins is soon to have a valuable addition to its Faculty, Prof. Homer A. Plekte, of Smithville, having accepted a call to its chair of Analytical and Applied Chemistry. There are now 430 students in Aurora College, Galaxytown, Ks. Thirty-five of these are to graduate at the next commencement; so that the institution may now be said to be in a very flourishing condition. The Trombone Professor in the College of Music, Palmyra University, Ill., has been persuaded by his numerous friends to accept the Violin chair of the University of Raphanusburgh, O. A very able address has recently been delivered before the Gamma Upsilon Omega Society of Cormorant University, by Prof. Archimedes B. Abrissos, Ph. D., Q. C. L., the eminent scientist, on the great question, whether there be spiders in the moon, and, if so, whether their style of weaving is similar to that of terrestrial spiders," etc., etc.

Now, in saying that did we confine ourselves to information of this kind, and abstain from criticism, we should consult our own interest, we would not be understood to compare the claims which the leading newspapers of our principal cities have on the patronage of our educational institutions, to the claims of eulogising catalogues and business directories, for such would, for obvious reasons, be an absurd comparison.

But, be this as it may, it is no new revelation to us that those who wish to profit by nine-tenths of our educational institutions must not even hint that they have any faults, but

proclaim that they are all as near perfection as any human institutions may be expected to be. Why, then, do we criticise? Why have we always persisted in doing so when we felt it was deserved? We can truly reply that it is because we prefer to do what is good and useful, rather than what is profitable. We prefer the good-will of one competent, faithful educator to that of a hundred who are not competent, and, therefore, could not be faithful as educators if they would. And when we discover this one out of a hundred, no one appreciates the services he renders to society more fully than we; to none does it afford more sincere pleasure than it does to us, not only to acknowledge his merits, but to commend them earnestly to the public as exemplary and praiseworthy. Were we a candidate at the hustings for some political office, then we might respect the majority principle, but when we are to receive our verdict from good educators, or bad and indifferent educators, then we decidedly prefer the minority, even though it be only one to a hundred; most cheerfully accepting the advice of Publius Syrus—

"Non quam *multis* placeas, sed *qualibus*, *stude*."

for we are not merely pleased with the friendship of such men and such women—we are sincerely proud of it, regarding it as a veritable honor. And it will be our privilege to present to our readers new examples of such in this article, before we close, although, for lack of space, only in miniature.

But to return to our reasons for criticising. We do not pretend that our country is lower in its standard of education than other great nations have been. We know that it was not without much criticism, much effort. and much unpleasantness, the educational institutions of the countries alluded to were elevated to their present standard. Moreover, we bear in mind that not one of those countries had made so much progress in the cultivation of the intellect when only as young as ours; nay, not one of them had when five times as old.

In addition to this, we have noble examples before us; we read in history and biography of Englishmen, Frenchmen, Spaniards, Italians, and Germans, who had long battled for im-

provements in the educational systems of their respective countries, and whose reward was, in general, abuse, and sometimes even the prison and the gibbet; but whose labors were gratefully appreciated long after their death. Thus, the famous Gregory of Tours never did any thing more unpopular than to take the warm interest in the great cause which prompted him to exclaim: "*Malheur à nous! l'étude des lettres périt parmi nous, et il ne se trouve personne qui puisse raconter dans ses écrits les faits d' à present.*" The good Abbé de la Salle, founder of the Christian Brothers, was actuated by a similar sentiment when he deliberately relinquished all preferment in the Church, in order that he might devote his whole time and energies to the great cause, at the same time surrendering to it his whole patrimony as a member of the rich noblesse of France, retaining, at most, only the common necessaries of life. We have shown in a former article in this journal what imputations and accusations, nay, what persecutions, constituted his reward for the noblest of all labors and efforts.*

The first of the principal nations of modern Europe that established great educational institutions was France. Accordingly it was the first in power and greatness. This greatness had culminated in its intellectual aspect in the reign of Louis XIV. Many wonder why there has been a decline since in its higher order of intellectual activity, because they forget that most of the great schools, the foundation of which was commenced by Phillip Auguste in 1200, were destroyed while in their most flourishing condition. When the great Revolution broke out in 1789 there were twenty-three universities in France, besides that of Paris; but two years later (July 3, 1791), there was not one left in its integrity. The Constituent Assembly passed a decree declaring all suppressed. Nor are the rabble now in power content with destroying so many great seats of learning, for many learned men were put

* Educators of all denominations would do well to read his *Les doux Vertus d'un bon Maître.*

to death for no better reason than that they were learned. Suffice it to mention here, Lavoisier, the celebrated chemist, and the son of Buffon, the great naturalist. The fame of the former, for his discoveries in chemistry, had become universal, and he had but just published his principal work, the famous *Traité Élementaire de Chimie*, when he was guillotined. Michelet, Cousin, and Guizot have each affirmed, with regret and mortification, that France has never recovered from the loss of so many great seats of learning, not to mention the murder of so many of her learned and illustrious men. Napoleon I. was too wise a statesman not to deplore the calamity thus inflicted on France; he did much to retrieve the loss, but he was too constantly engaged in war to be able to devote sufficient attention to the great cause. Before the Revolution, the French universities were confessedly the best in Europe, and were attended by students from every other European nation. But, soon after the Revolution, Prussia began to take the lead, and she has maintained it to this day.

Before the Revolution, the German governments were in the habit of sending commissioners to France to seek information in regard to the system pursued at the universities, in order that they might render it available in the higher institutions of Germany; but after the Revolution it was the French government that had to send to Germany. Thus it was that Victor Cousin, the philosopher, was sent to Prussia in 1833, and published his well-known *Rapport* on Public Instruction in Prussia, a work full of interest even at the present day for the important information, and valuable suggestions which it contains.*

Seeing that France had profited largely from this report, and that it had a decidedly beneficial influence in England also, the British Schools Enquiry Commissioners, in 1865, charged Mathew Arnold with a task similar to that of Cousin, and

* Cousin's *Rapport* was translated into English by Mrs. Austin, in 1834. An elaborate, able, and instructive review of the original may be found in the Edinburgh Review (vol. lvii).

that it was faithfully performed, all acquainted with his book entitled "Higher Schools of Germany," are aware. In this work the great superiority of the Prussian system is candidly admitted; and Mr. Arnold also admits that the French system ranks next to that of Germany; and, what caused more surprise, when the book was first published, he admits that the English system, including that pursued at Oxford and Cambridge is, in many important respects, much behind that of France as well as that of Prussia.*

Now, if the universities of Oxford and Cambridge are confessedly inferior to those of Germany and France, what can be said of the general run of our colleges and universities? Before this question is attempted to be answered, let it be remembered that there are thousands who graduate with high honors at nine-tenths of our colleges and universities, who could not obtain admission to the freshman class at Oxford or Cambridge, without some stronger influence than the amount or extent of their knowledge, as vouched for by their diplomas. For the truth of this no other than American authorities need be quoted. The books of Mr. Bristed and Mr. Hart are sufficient. The latter—entitled "German Universities"—was published only a few months since, and it devotes a chapter to a "Comparison with American Colleges," which should be read in connection with its "Comparison with English Universities,"—the author's models being the educational institutions of Germany.

* It is universally admitted by the educated classes in England, that Dickens has deserved more of his countrymen by his exposures of the ignorant charlatans who called themselves head-masters of academies and seminaries, than by all his other writings. Lord Macaulay declared in a speech delivered before the Society for the Diffusion of Knowledge, at Birmingham, that the portraiture of Wackford Squeers, and Squeers Academy, Dotheboys Hall, in Nicholas Nickleby, not to mention that of Doctor Blimber of the private boarding school at Brighton, in Dombey and Son, merited the lasting gratitude of the British nation. And his lordship added that the shameful condition of education so justly and effectually satirized by Dickens, could not possibly have existed in Germany or France, where ignorance and imposture are forced to resort to other contrivances than teaching, to gull and swindle the public.

Before we inquire, in passing, what is the chief foundation of the acknowledged superiority of the Prussian system of higher education, let us pause for a moment to see how that foundation was laid. Thomasius, a native of Leipzig, was the first to show how much the German system needed improvement, to make it even approach that of France, or England. In 1685, he established a periodical, the first ever written in German, mainly for this purpose, announcing as its contents "Gossip about Books." "Rational Christian Thoughts on all Subjects." "History of Wisdom and Folly." Very soon his criticisms on the universities and their professors brought him into trouble. For his pains, he narrowly escaped imprisonment in his native city; and after his escape the small amount of property he had—only some books and wearing apparel—was confiscated. In short, he was persecuted in every way, and the most diabolical motives were attributed to him; about nineteen out of every twenty of the professors and head-masters—those to whom his criticisms too obviously applied—regarded him as their mortal enemy. Among the remainder, however, he had warm friends who clung to him to the last. Such of these as lived to be old had reason to congratulate themselves in the end, for in spite of all opposition, he was finally successful, although too late for him to enjoy his great triumph. "Half a century," says Menzel, "elapsed ere the ideas of Thomasius *were generally adopted*; and even this did not take place without many troublesome transitions." *

Although Wieland, Herder, and Lessing contributed their full share to the good work, those most instrumental, after Thomasius, in establishing the present system, were Basedow, Pestalozzi, Wolfe, and Humboldt, especially the two latter. What the corner-stone of the system is, we have told our readers more than once. It consists in the law that no one can teach in Prussia, in a public or private institution, without undergoing a rigid examination, and obtaining a certificate as

* *German Literature*, Gordon's Translation. By Wolfgang Menzel, vol. ii., p. 13.

to his qualifications. To illustrate how fully this law is carried out would require more space than we can devote to this whole article. But it will be sufficient for our present purpose to say that imposture, or charlatanism, in teaching is out of the question in Prussia. Even those having the highest diplomas from the best universities must submit to be examined if they want to become instructors.

The candidate may be a clergyman of any denomination, a Ph. D. or a D. D., but this will not be sufficient. The only exemption the doctorate can obtain is that his examination may not be in writing. But even this is denied—he must answer the questions proposed to him in Latin, and explain himself generally in that language—if there be the least suspicion that his diploma was too easily obtained. The founders or patrons of private schools are allowed the privilege of nominating teachers; but they must be examined by the state authorities and obtain their certificates before they are permitted to teach. Even then no teacher, public or private, of any grade, is permitted to teach any other branch of education than that in which he has proved his fitness without undergoing another examination.

It is no fair objection to say that this is tyrannical. In the Prussian Deed of Constitution (*Verfassungs—Urkunde*) of 1850, the following passage occurs: "Every one is free to impart instruction, and to found and to conduct establishments for instruction, *when he has proved to the satisfaction of the proper state authorities that he has the moral, scientific, and technical qualifications requisite.*" Even a foreigner, a Frenchman, or an Englishman, a Spaniard, etc., wishing to give tuition in his own language must submit to be examined, and if he does not prove himself liberally educated—acquainted with Latin as well as with his own tongue—he must not attempt to teach in Prussia. In France the public are protected in a similar manner—though not so carefully, or so rigorously—from all who would pretend to teach others what they are ignorant of themselves.

Notwithstanding all the precautions thus taken in Germany and France, to exclude smatterers and pretenders from the instructor's chair, whether that chair is in the university, the gymnasium, or the private school—there is not one of those institutions, in either country, but is held to be amenable to the criticisms of all who take a sufficient interest in its working to visit it, and give their impressions of it to the public.

No one who has devoted any attention to the subject need be informed how much Germany and France have gained by this system, or how much each had lost in past ages by one similar to our present system. But none, we trust, would infer from this that we would condemn all our institutions. Far be it from us to deny that there are those among our educators who need no laws to compel them to be competent, honest, and faithful. To none does it afford more pleasure to bear testimony that there are American educators, male and female, who are not surpassed in their qualifications, or in their devotion to their calling, by the educators of any country whatever. Nay, more, we hold that such are to be found among all denominations, and that there is no enlightened nationality which is not creditably represented, by ladies as well as gentlemen, in our educational institutions of all names. We have never alleged, anywhere, that there are not good literary and scientific institutions in America. What we have always complained of, and sincerely deplored, is that there are so very few of this class—so few that are a law to themselves, in the best sense of the term, and so many that violate all law—so few that teach because they are qualified to teach, and love to do good, and so many that only pretend to teach, without any qualification whatever, and who have no further motive than to exact all the money they can from those who are ignorant and credulous enough to confide in their pretensions.

There are different grades in each category. We have tried from time to time to enable our readers to distinguish these from each other; and the remainder of this article will be devoted to a similar effort. From the nature of our sub-

ject we must necessarily be desultory and discursive. We are well aware that to many it must seem a sad violation of the unities to discuss the merits of universities and colleges, male and female, in the same article with academies and schools, male and female. But the difference between the several classes of institutions often consists more in the variety and extent of the instruction given than in its quality. This will be the more readily admitted when it is borne in mind that we frequently meet with the principal of a school or academy, male or female, who is abundantly qualified, by his qualifications and abilities as an instructor, to be the head of a college or university. For the same reason it is not difficult to understand, on reflection, that there are schools and academies, male and female, in this country at which really better instruction is given than at many of our colleges and universities. But whether it be understood or not, such is really the fact. It is so to such an extent that we confess we cannot help smiling when we read, in the catalogue of a first-class school, seminary, or institute, that it prepares students for college, so many instances have we seen in our peregrinations in which the college students were far below the preparatory school students; and this strange, almost incredible anomaly, we have witnessed in female as well as male institutions.

By this, however, we mean no reflection on colleges or universities worthy of the name. On the contrary, we think that such should be all the more appreciated on this account, and should be sought out with the more care by those wishing to secure a thorough education for sons or daughters.

This idea never occurred to us more forcibly than it did during a recent visit to Syracuse University. Although this is one of the youngest of our institutions, we had heard much in its praise. More than a year ago we were honored with an invitation to visit it; we were obliged to postpone going from time to time; but, learning that the Rev. Dr. E. O. Haven had been elected its Chancellor, and duly inaugurated, we resolved to visit Syracuse as soon as possible. Not that we had ever had the slightest personal acquaintance with that gentle-

man, but we knew many, well competent to judge, who had a lively faith in his qualifications as an educator; and in justification of their faith they called our attention to two institutions which, they assured us, he had contributed more to build up than any other individual. Suffice it to mention one of these, namely, the University of Michigan, which, although we have never seen it, we have been led to believe ranks among the best of our colleges.

But we had before us other evidence of the qualifications of Dr. Haven, which, in our estimation, was still stronger. We allude to a modest volume, entitled "Haven's Rhetoric: A Text Book for Schools and Colleges," published in 1869 by the Messrs. Harper. This book we had often recommended to our educational friends as superior to any European work of equal extent and pretensions on the same subject, and we felt satisfied that there was no impartial, competent educator, whether European or American, that examined the book as carefully as we had done, who would not agree with us in our estimate of its value.

We had also entertained a high opinion of Professor Winchell, the predecessor of Chancellor Haven, especially as a geologist, and had considerable faith in Prof. Comfort, of the same institution, as to his capability in the departments of modern languages and æsthetics; yet we were quite as agreeably surprised, during our visit, as we had been only a few months previously in visiting La Fayette College.

This pleasant feeling was enhanced in the present instance, in no slight degree, by the recollection of what we had seen at Rochester University—comparatively an old institution—on the previous day. So far as courtesy to us was concerned, there was scarcely any difference between the heads of the two institutions; and, had it been otherwise, we really would not have allowed the fact to influence us in our estimate of what we saw and heard. If the contrary inference has been drawn on any similar occasion from the seeming acerbity of our remarks, it is simply because only the lowest class of so-called educators are so rude and vulgar as to make insulting re-

plies to courteous and friendly inquiries, on a subject in which the humblest member of every civilized community has a legitimate interest. We are certain that the president of Rochester University would not behave in an ungentlemanly manner toward any one; but it is a very different thing to be certain that he is a good educator, or that Rochester University is a first-class, or even a third-class, American university. At all events, we are by no means certain on either point, but rather the reverse.

We are quite aware that these remarks will not be at all agreeable to the head of Syracuse University, for no one speaks more kindly of his brother educators than he. He cannot blame us, however, since he admits in his "Rhetoric," that, "The first object of comparisons is *to convey information*"* a fact in which he is sustained both by Aristotle and Longinus. Accordingly, he adds, a little further on, after denying very properly that comparison is a figure of speech, as it is sometimes called, that "every writer and speaker *should study its nature and power*." We hope we shall be excused, therefore, for the opinion that, had the president of Rochester had to undergo an examination in accordance with the Prussian system, he would have sought in vain for the *facultas docendi*. Nay, more, we fear that there is not one of his faculty who would have been more successful in such an ordeal than he, except perhaps Prof. Kendrick, who is a very respectable Grecian.

Thus, we visited Syracuse, after Rochester, with doubts and misgivings very like those we had in visiting La Fayette, after our experience of the University of Pennsylvania and its learned provost; and nearly equally great was our surprise in both cases. At Rochester, as well as at Syracuse, we were present at lectures and recitations; but they were very different kinds. At the former institution we heard two lectures, but both were the performances of one professor, namely, Dr. Anderson, the president, who has a great weakness for meta-

* Page 88.

physics, in which he evidently thinks he excels. For our own part, we have seldom been more amused than we were during the hour we listened to his metaphysical lore. He read from a manuscript, in a fearfully drawling tone, what to us seemed, we regret to say, the most tiresome platitudes. What struck us as most comical, was that, at the end of each sentence, he interpolated with a peculiar twang the word ("period"), so that the students could copy every word in its full force. Of course, we would find no fault at that time and place, no matter what was said or done, but, on the contrary, if our opinion had been asked, we would have expressed our entire satisfaction, although we could not help thinking, in our own mind, that the most appropriate point in three-fourths of the instances in which "period" was cried out, would have been the note of admiration (!) or interrogation (?) or, as the printers call the latter, the "*query*." For some time we expected to hear "comma," "semicolon," etc., in a similar manner. Having never before heard the "period" sung out thus, except in primary schools, we cannot wonder if many regard our statement as incredible; but for the literal truth of it we appeal to the students. They will, also, bear us out in the fact that the terms "shaky," "shakiness," etc., etc., are the pet terms, constantly recurring, with which the professor describes those metaphysicians whose stars had not allowed them to be as well informed as himself on the *modus operandi* of the intellect. The students will also bear us witness that, in his lecture on Ancient History, no epithet recurred more frequently than "tremendous." Thus, for example, Hannibal was not merely a great general, or the most illustrious captain of the heroic age in which he lived, he was "a *tremendous* genius," etc.

Of the two lectures we heard at Syracuse University, one was on chemistry, the other on geology, and both were illustrated, the former by experiments, and the latter by maps and diagrams. Both lecturers have attained distinction in their respective departments; but this is particularly true of Prof. Winchell, who possesses a high reputation as an eloquent ex-

pounder of the principles of geology. We were much pleased at the outset to observe that citizens attended each lecture. Quite a number, chiefly ladies of culture from the city, were present at Prof. Winchell's lecture, and it was evident from their earnest, thoughtful attention, that they were not merely interested and pleased, but delighted. The admission thus to the college of intelligent citizens who take an interest in particular departments of research, is a step in the right direction in America, and we heartily commend it as exemplary. In France and Germany such has been the habit for generations. In Prussia, especially, every professor is bound by law to give at least one lecture in each course—generally one each week —at which all who have a taste for the subject, whether citizens or students, may attend without obstruction or cost. But this is not the only good feature of the German system which has already been introduced at Syracuse with every prospect of success. We may mention as another instance the copious printed syllabus of Prof. Winchell, filling an octavo pamphlet of some thirty-two pages. This embraces an analysis of his whole course on geology, and is well calculated by itself to stimulate the reader to study and research.

The Syracuse University has now three colleges in energetic operation—namely, the College of the Liberal Arts, the College of the Fine Arts, and the College of Physicians and Surgeons. The two former we have seen at their work in various departments, and we think that the least that can be justly said of them is that each promises well. The buildings and their appliances, the libraries, the apparatus, the art and scientific collections, the grounds, the general surroundings—but, above all, the characters of the different faculties, and the enlightened and faithful management of the entire institution—seem to us to predict, as confidently as any human agencies can, a brilliant and honorable success.

It is now some years since we visited Harvard, Yale, and Columbia. Each was doing good work then, but if they have not made considerable progress since, they can no longer pretend to take the lead in higher education. It is certain, at

all events, that the Methodist denomination in America have two institutions of which they may well be proud—namely, those of Middletown, Conn., and Syracuse, N. Y.* They have, it is true, one at Boston, whose pretensions are far more lofty than those of either. Our readers need not be informed how high our estimate is of the educational institutions of Massachusetts; nevertheless, we confess we cannot for the life of us turn our thoughts to Boston University, and its College of Music, without a smile—sometimes a hearty laugh. This may be an infirmity on our part; but, if so, quite a formidable number of the most cultivated men and women of Boston must be also infirm, for they do not merely smile and laugh, but jeer, and even hiss, at the violin chair, the trombone chair, the tambourine chair, etc.

Along the whole course of the noble Hudson—from Manhattan College to Fort Edward Institute, each a representative of excellence in its class—are to be found, scattered through the different towns, villages, and cities on its banks, almost every type of American educational institutions, from the very best to the very worst. There are, indeed, some, including those mentioned, which are not surpassed, so far as they claim to go, by the similar institutions of any country in the world; that is, there are those which yield to none anywhere in the faithful performance of what they undertake to accomplish. And in expressing this opinion, not from rumor

* It has been the habit, since we remember, to regard the College of New Jersey (Princeton) as the representative institution of the Presbyterians in America. The connection of Dr. McCosh with it has no doubt deepened this impression, and with good reason. But, nevertheless, it is shrewdly suspected at the present day, by many, that if the intellectual training and the amount of real knowledge communicated at Princeton be equal to those at La Fayette College (Easton), the former institution is, at best, not superior to the latter. For our own part, we do not believe it is, but think if it be equal to it, there is no reason to blame either Princeton or Dr. McCosh. Until we learn more on the subject, all we can say is, that whether Princeton has made much progress in recent years or not, the Presbyterians have good reason to be proud of La Fayette, since its progress has been incredibly large.

or hearsay, but from actual observation, we make no distinction whatever between the institutions which are controlled partly or wholly by the different religious sects. Each sect has its good and its bad schools. Accordingly, if we find fault, it is with the inferiority of the school, not with the sect to which it belongs.

The only distinction which has struck us as remarkable in this respect is, that we have found the schools of the different sects defective in proportion as they give undue prominence to their own peculiar tenets. In other words, our experience has been, that, in proportion as the exhibition of sectarian piety is large, that of real intellectual culture is small. We allude now, however, only to the female institutions; nor do we allege that Catholic schools depend more unduly on their piety than Protestant schools.

Thus, for example, we do not think that either the Sacred Heart, or Mount St. Vincent relies more on the religious element in its prestige, or less on the element of merely human knowledge, than St. Agnes School at Albany, of which the Bishop of Albany is principal and rector. But, be this as it may, we can bear testimony to the fact that there are several female schools on the Hudson vastly superior in every essential respect to Bishop Doane's school. With some of the former our readers are already acquainted; with the rest of them they will be in time.

That we are not actuated by sectarian prejudice in making this comparison will be sufficiently evident from the fact that we have been brought up ourselves in the Episcopal Church (as our fathers before us had been for generations), and have never belonged to any other. Still less are we of those who regard Episcopal clergymen, in general, as indifferent instructors. We should be illogical and absurd did we pretend to pass such a sentence on a body that has furnished to the universities of Oxford, Cambridge, and Dublin, their best instructors for nearly three centuries. Moreover, there are no American educators of males or females whom we regard as superior to clergymen of the Episcopal church in America.

This is true, for example, of the Rev. C. M. Selleck, of Norwalk, Conn.; the Rev. D. G. Wright, of Poughkeepsie, Rev. Elvin K. Smith, Burlington, N. J., and the Rev. F. A. P. Barnard, of New York, etc. We have seen the institutions conducted by all these gentlemen at their work; we have also seen the institution of Bishop Doane at its work; but, in our humble judgment, the latter is not to be compared with any of the former. By this we mean no reflection on any of the ladies connected with St. Agnes School, whether as teachers or "Sisters" (Protestant nuns!). We find no fault whatever with either; our fault is only with the miserable results attained—results, we regret to say, immensely and ludicrously disproportioned to the lofty pretensions of "the Rt. Rev. Principal and Rector."

We are quite aware that this will seem to many unduly severe, if not unjust, on our part. But we beg such to pause for a moment. The external appearances of things at St. Agnes's are, indeed, highly respectable. But in observing the crowds in each room we were too forcibly reminded of the remark of Goldsmith: "Nature seems to present us with *a universal blank of silk, ribbons, smiles, and whispers*,"* and then of the somewhat similar precept of Seneca, that "The vulgar are to be found in all ranks, and *are not to be distinguished by the dress they wear*." †

The same day that we visited St. Agnes' School, we, also, visited Albany Female Academy. The lady principal afforded us a full opportunity of forming an estimate of the institution. We cheerfully bear witness that we saw nothing in the Academy which seemed to us deserving of any censure. True, we did not consider it equal to other female institutions on the Hudson which we had visited, nor did its principal claim for it any superiority, or make any higher pretensions than that she and her assistants tried to perform their duties faithfully. This we had every reason to believe, but after we had seen St. Agnes, we thought much more highly of the

* *Inquiry into the Present State of Polite Learning.* Chap. ix.

† Vulgum tam chlamydatos, quam coronatos voco.—*De Vit. Beat.* 20.

Academy than we had before—in a word, we thought the latter a much more creditable institution than the former.

Now, why should we express this opinion if we did not believe it just? Some, we are aware, would assign various potent reasons for it. Yet, we are just as little indebted to the Academy as we are to St. Agnes; we expect as little from the one as from the other. We are assured that the Bishop is quite an expert in vulgar arithmetic, and that he would employ the best teachers if he could only get them cheap. True, St. Agnes brings in a goodly amount of money, but the way to become wealthy in the school business is not to pay high prices for professors while cheap professors may answer just as well. Doubtless, the Bishop of Albany is aware that some haberdashers make their fortune by buying slightly damaged wares because they get them cheap and can secure nearly, if not quite, as high a price for them as if they were not damaged at all.

Perhaps this will account for the curious fact that the sheet-anchor of the St. Agnes School—the educator supposed to give it its chief *éclat* next to the Bishop himself—is a gentleman who, having once been an assistant teacher in a third-rate school in England, made love to the wife of the principal thereof, and induced her to elope with him to America, leaving his own wife and family to shift for themselves. The poor head-master followed the twain to this country; and it is notorious that Lothario was soon convinced, in a manner very disagreeable to himself, that, after all, America was not the "free country" it was represented abroad. Far be it from us to say that, even when a man so far forgets himself as to run off with his neighbor's wife, abandoning his own wife and family to their fate, he should be excluded from society forever after. There are various callings, both useful and honorable, including that of teaching persons of the masculine gender, from any of which we would not exclude him on his evincing a disposition to be less amorous and more conscientious in future; but we confess that the last place we should expect to find him installed as an oracle and moralist is a

young ladies' school, whose principal and rector is a Bishop! Yet we have now before us several printed documents headed "St. Agnes School," etc., in each of which the gentleman alluded to figures as "examiner," "formerly of Oxford,"* &c. To him, it seems, French, algebra, Greek, political economy, geometry, Latin, etc., are all alike.

His questions, in each, are printed as models. In one "Christmas Examination" (1874) Racine's "Athalie" is the subject for learned discussion. We have only to remark in regard to this that it contains some lines which, if recited on the occasion by the "examiner," would have been very appropriate—such, for instance, as the following:

> "Prêtez-moi l'un et l'autre une oreille attentive.
> *Je ne veux point* ICI *rappeler le passé.*"

Probably it is the *moral* effect of this gentleman's connection with this institution that prompts the Bishop to proclaim to the world that the students of St. Agnes may aspire to obtain certificates of superior scholarship, not from any American college or university, whatever may be its pretensions or its fame, but—tell it not in Gath—from Oxford University! Seriously, we refer to all this clap-trap, and whatever else it may be called, only as one of the "peculiar features" of St. Agnes which rather surprised us.

But, once aware of it, we confess we were not surprised

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* That we are not actuated, in making these remarks, by any prejudice against bishops as the founders or heads of educational institutions, will, we think, be sufficiently proved by the fact that we readily accept the high estimate given us of the two Colleges, male and female, of Bishop Hellmuth, at London, Canada, by an American lady who is herself distinguished as a veteran educator and educational author.

No one is more patriotic than this lady; nor does any one sympathize more sincerely with those of her countrymen and countrywomen legitimately and creditably engaged in teaching. But neither her patriotism nor her sympathy prevents her from bearing the most emphatic testimony to the superior qualifications and abilities of the Bishop as an educator. The lady concludes her letter—in which she gives excellent reasons for her opinion—as follows:—"I believe they (the Colleges) are of the highest class, and that, instead of sending our sons and daugh-

to find that the recitations at that institution were, in our opinion, greatly inferior to those we had witnessed at several of our public schools, not to mention the academies and seminaries on the Hudson, and elsewhere, to whose good works we have borne testimony from time to time in these pages. We may be entirely wrong in our estimate, but if we can have any confidence in our judgment in the present case, we cannot help thinking that the Bishop of Albany would serve the cause of education vastly better by devoting his whole attention to his Episcopal duties, and transferring the rectorship of St. Agnes to some competent clergyman of his diocese—one who is really entitled to the *facultas docendi*—than by continuing to manage it after the present wretched fashion.

While we can truly say that we never criticise educational institutions of any grade, but with reluctance, we can as faithfully affirm that it always affords us sincere pleasure to indicate the merits of those which, in our opinion, possess such. It is in the latter spirit we now turn to the "City of Schools," as Poughkeepsie is justly called. Since our last, it has been our privilege to visit two institutions there, which we had not seen before, but of which we had heard much that was highly favorable. When we wish to see institutions of this kind, we never find any obstacles in the way, but are cordially invited,

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ters to Europe for education, that location—a few hours from Niagara—affords all the advantages of the best European and American schools."

We can say nothing of the Hellmuth Colleges from our own knowledge, having never visited either; nor have we the honor of being personally acquainted with the Lord Bishop of Huron. But, even if we had not implicit confidence in the judgment and fidelity of our esteemed correspondent, as we have, and did she not seem fully sustained in her estimate by the most enlightened public opinion of British America, we should regard the relations of the Bishop with those institutions, at least, as strong presumptive evidence in their favor.

It is true that we had a similar idea of St. Agnes' School, before we had seen it; but there is this important difference, that to this day no experienced educator, male or female—no competent, impartial judge—has assured us that the latter is a first-class, or even a third-class school.

and frequently without any suggestion on our part. We have been so invited in both the present instances, namely, to Cottage Hill Female Seminary, and to Poughkeepsie Military Institute. The head of each is a competent, experienced, and faithful educator; and we think our readers will bear us testimony, that in no instance have we ever spoken of such in any other language than that of good-will and approbation. Nor need we go beyond Poughkeepsie for illustrations of the fact; for nowhere have we found more to commend as exemplary, than at the Poughkeepsie Female Academy and the Riverview Academy. Such is the excellence of the two latter in our estimation, that we feel we could not pay the two former a higher compliment than to compare the four with each other respectively. In some respects, indeed, neither Prof. Bisbee nor Prof. Wright has any rival on the Hudson, but since our readers are already familiar with the peculiar characteristics of each, as an educator, we need say no more here on that subject.

We spent several hours at the Seminary—long enough to hear nearly all the classes recite, and far from feeling in the least wearied, we were much interested and pleased throughout. What will seem stranger to a certain class of educators, neither pupil nor teacher of any class evinced the slightest objection to the presence of the "Quarterly" editor. As for the teachers, all without exception were the reverse of objectors, except we regard in this light their insisting, in several instances, that we question the students. Especially did Prof. Wetsell, the principal, urge this; moreover, the young ladies knew better, in every instance, than to feel at all frightened or disconcerted at the idea. Satisfied on these points, we cheerfully allowed ourselves to be persuaded to take part in some of the recitations, and we felt sincerely gratified to see that in no instance did any confusion arise from our doing so. Thus it was that we hardly felt the hours gliding by while a recitation in geometry succeeded one in natural history, to be followed by one in geometry, alternating, in turn, with one in chemistry, Latin, conic sections, natural philosophy, or ancient or modern history, etc.

Of the musical department we cannot speak critically, but can truly say that, at intervals, we overheard some exquisite strains. To this we can only add that Cottage Hill Seminary has a high reputation for its music. But, above all that impressed us agreeably, we must not forget the art department, which is under the supervision of Mrs. Wetsell, the accomplished wife of the principal, who is an artist herself, of no ordinary merit. The latter fact is, indeed, abundantly proved by the truly admirable sketches of the beautiful, picturesque, and grand, in American scenery, from her graphic and graceful pencil, which adorn the parlors as well as the studios of the Seminary.

Now, if it be borne in mind that we had all these pleasant scenes fresh in our memory when we went down to Albany, and that we also remembered Poughkeepsie Female Academy, Locust Hill Seminary, Maplewood Institute, Bordentown Female College, St. Mary's Hall, the best ladies' school in the modern Athens (Gannett Institute), the best in New York (Mlle. Rostan's), and the best in Philadelphia (the Chegaray Institute);* we think we can hardly be blamed if—in spite of the high respect which it is natural we should have

* At this time we had not seen the Hudson Young Ladies' Seminary. But on our way from Albany we concluded to spend a day at Hudson. Inquiring at the hotel and book-stores, we were informed that that just mentioned is "by far the best institution this side of Poughkeepsie." "If," says a medical gentleman, "you wish a really good, unpretending school for your daughter or ward, visit Miss Peake's Seminary—it is only a step from this—and judge for yourself." Finding that the school was in the immediate vicinity of the hotel, we did not hesitate to take the doctor's advice. We rang somewhat reluctantly, not wishing to cause interruption, and were immediately ushered into the neat sitting-room, where, in a minute or two, we were joined by Miss Elizabeth Peake, the principal of the Seminary. A tall, delicate lady, bearing on her face the traces of thought rather than of time, she seemed almost as fragile as the vine tendril, but as bright and radiant as its flower. A few minutes having been passed in agreeable conversation about young ladies' schools, some remarks ensued, incidentally, which rendered it proper for us to say whence we came. It really pained us not a little to think that the lady might be frightened to learn

for the high dignitaries of the Church of our fathers, and in spite of what we trust we may call our unobtrusive piety—what was recalled to our memory most vividly on seeing the performances of the principal crowded classes at St. Agnes' School, together with some printed eulogies on the same, made by pious politicians seeking Episcopal votes, was the celebrated French panegyric on *Geese*, which runs thus:

"Des chansonniers damoiseaux
J' abandonne les voies;
Quittant bosquets et réseaux,
Je chante au lieu des oiseaux—
Les oies!

"Strasbourg tire vanité
De ses pâtés de foie;
Cette superbe cité
Ne doit sa prospérité,
Qu' aux oies!"

As most of what we have said of the instruction at Cottage Hill applies with equal force to that at Poughkeepsie Military Institute, the difference being little more than that

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that her interlocutor was no other than the editor of "the savage Quarterly;" but, to our very agreeable surprise, Miss Peake rose instantly from her chair, and, with a hearty laugh, grasped us by the hand. "Why," said she, "I am really delighted to see the author of those articles that amused and gratified me so much." She then proceeded to mention certain criticisms which pleased her most, and related some amusing facts and occurrences illustrative of their justness and truth. Several times she proposed that we would see her classes, we as often expressing our fear that we might cause interruption. But Miss Peake kindly insisted on our going, and we pledge our word to those who know us that we have not spent a more pleasant hour or two in the whole course of our educational researches than those during which we witnessed the various exercises, both intellectual and physical, of the Hudson Young Ladies' Seminary. Not only did we hear excellent recitations in grammar, history, French, geography, etc.; we were also honored with some very good music, both instrumental and vocal; but, really, what pleased us best of all was the dancing.

Miss Peake's school is not large, but very select. She takes as affectionate an interest in every thing her pupils do as if they were her own children. In addition to her sister, who fully sympathizes with

rendered necessary or appropriate by the difference of sex, we need not occupy our readers long with the latter institution. We were present at recitations in all departments —at physical as well as intellectual exercises—and it is but simple justice to the several instructors to say, that there was not one of those recitations or exercises which did not strike us as highly creditable. Prof. Jewett, the principal, is comparatively young in years, but that he is an experienced educator, and one from whom much is to be expected, will be readily assented to, when we mention that he taught successfully for two years at one of the best seminaries in Massachusetts, was principal of a prominent academy in Connecticut for four years, and was four years more vice-principal of the Collegiate Institute at Poughkeepsie, when that institution was a very different affair from what it is now, for we are sorry to say that it has sadly degenerated since it passed out of the hands of its founder, with whom Prof. Jewett was assistant in the palmiest days of the school.

This record would have great force even in Prussia. If it would not be sufficient to secure him the *facultas docendi*, it would, at least, satisfy the board of examiners that it is needless to propose many questions to such a candidate. A principal who is a good educator himself, will, naturally, select competent assistants, and the fact is well illustrated in the present instance.

We would not say that the head of Poughkeepsie Military Institute is in all respects equal to the head of Riverview Academy, Poughkeepsie; but we do not hesitate to predict that, when the former is so much a veteran as the latter, he

her in her attention and solicitude, she has several other accomplished assistants, including a native French teacher, who resides at the Seminary.

Such being our experience of the Hudson Young Ladies' Seminary, we were not at all surprised when we learned, on our return to the hotel, that Miss Peake is an author as well as a teacher—the two interesting and instructive books, published not long since by the Messrs. J. B. Lippincott & Co., entitled respectively, "Pen Pictures of Europe," and "The German Emperors," being from her pen.

will be equally distinguished for the most essential qualities of an educator. Nay, more, we believe that he will have proved himself equally successful in building up, both literally and metaphorically, a first-class institution; and those who know what Prof. Bisbee has accomplished, will understand the force of this.

The military element is turned to most judicious, excellent account, at the Institute, as well as at the Academy. At either, it is not allowed to interfere in the least with the essential intellectual work of the school; its object in each being to present an agreeable inducement to healthful physical exercise, and to render the student at once manly and graceful in his bearing, and orderly and punctual in his habits. Some will pretend to regard us as self-contradictory in speaking in these terms of the influence of military drill in schools, but the only evidence they can adduce in support of the charge is, that we have ridiculed certain burlesque "military institutes," "military academies," etc., which were still more burlesques considered as ordinary schools. In reply, it is sufficient for us to say that, years before we unmasked the concerns alluded to, we had spoken in these pages, in the following terms, of Prof. Bisbee's school:

"His system of education—combining, as it does, the study of the classic and modern languages with that of the sciences, music, and *military art*—has often *reminded* us *of those ancient schools which produced such pupils* as Pericles, Sophocles, Xenophon, Julius Cæsar, and Scipio Africanus."

We meant that all these illustrious men had been instructed at school in the military art, but were not the less distinguished as thinkers and men of culture on this account.

Referring to the martial element, reminds us that the Alexander Institute at White Plains, N. Y., seems entitled by common consent to rank with some of the best schools whose merits we have taken pleasure in indicating. We have not yet seen it at its work; but we know that Dr. Willis, its principal, is a gentleman of liberal culture and high attainments, and that he has had abundant experience as an in-

structor. We have remarked more than once that educators of this character, far from objecting to our seeing their classes, generally do us the honor of inviting us. As we have been so honored by Dr. Willis, we hope soon to be able to give our impressions of the Alexander Institute. In the mean time we have good faith in the principal, and have no doubt that in both an intellectual and physical sense he treats his pupils well.

There are several institutions, good, bad, and indifferent, never yet mentioned in these pages, with whose respective systems we have made ourselves more or less familiar, but to which we cannot now even allude. However, our readers may rest assured that neither class will be forgotten. We have full notes of each, and shall carefully preserve them. We never calculate on using all our notes in one article; but we promise to give our readers some "Reminiscences" from time to time, embodying odds and ends we have seen at various institutions, some of which, like the postscript of a lady's letter, reveal more than the more extensive performances.

But by this we do not mean that we intend to keep the poor frogs in hot water by continuing our educational excursions quarter after quarter. Were we even cruel enough to do so we could not afford the time, not to mention the expense. Nor had we ever thought differently. We have gone on these excursions, visiting the bad and indifferent universities, colleges, academies, etc., just in the same spirit which prompted us to visit, in turn, the lunatic asylums, and the state and city prisons, in all parts of the United States. The most malicious could hardly accuse us of expecting much profit from visiting asylums and prisons, and criticising their management. This did not prevent us, however, from denouncing all connected with those institutions whose conduct seemed to us cruel, tyrannical, fraudulent, or otherwise reprehensible; nor did it prevent us, upon the other hand, from awarding their full meed of approbation to those superintendents, wardens, or governors,

who managed those institutions humanely and intelligently, in accordance with the enlightened spirit of the age. Among the former class we necessarily created enemies: among the latter, friends; but for obvious reasons there were ten enemies for every one friend!

We have found the ratio just about the same among the heads of our educational institutions of the various grades. This is quite in accordance with the fact that the things which surprised us most in our recent excursions were the ignorance and false pretensions of so large a number of those claiming to be great educators. No doubt the remainder of this numerous class will be delighted to learn that they need not fear to receive any visit from us at least for some time to come; but we have collected facts enough to afford us materials for more articles than we can write on their peculiar style of imposture for at least a year to come.

As for the opposite class of institutions, these we have been in the habit of visiting, at intervals, for a quarter of a century, on the invitation of their heads; and we shall regard it as a privilege to do the same in the future, as often as we can. It only remains for us in this discursive, desultory paper to tender our sincere thanks to those true educators who, by their courtesy and kindness, have contributed to render our excursions as agreeable and pleasant as possible to ourselves. Nor do we cherish any worse feeling toward those whose most faithful prototypes are Wackford Squeers and Dr. Blimber, than to wish that they betake themselves to some business for which they are better calculated, both by nature and education, than for teaching.

NOTICES AND CRITICISMS.

HISTORY AND BIOGRAPHY.

The Life of Benjamin Franklin. Written by himself. Now first edited from original manuscripts, and from his Printed Correspondence and other Writings. By JOHN BIGELOW. 3 vols., 12 mo. Philadelphia: J. B. Lippincott & Co. London: Scribner & Co. 1875.

MOST cordially do we welcome this autobiography of one whose name, as a man, a statesman, and a philosopher, has ever been a just source of pride to the American people. Biographies of Franklin have been issued without number; but we have here a veritable revelation of the great man himself, in his every-day life, as he appeared to his family, his friends, and his contemporaries—told with a simplicity and *naïveté* characteristic of the writer—not, altogether, devoid of vanity, as he frankly admits, saying, good-humoredly:

"Most people dislike vanity in others, whatever share they may have of it themselves; but I give it fair quarter wherever I meet with it, being persuaded that it is often productive of good to the possessor, and to others that are within his sphere of action; and therefore, in many cases, it would not be altogether absurd if a man were to thank God for his vanity, among the other comforts of life."—vol. i., p. 82.

The autobiography proper—that is to say, the portion expressly written by Dr. Franklin for the purpose of serving as memoirs of his life—is limited to two small manuscripts, both of which are contained in the opening volume of this work. Of these the first appears to have been written in England in 1771, and is addressed to the writer's son, William Franklin, at that time Governor of New Jersey. This portion, not having been intended for the public eye, possesses, in a higher degree than the rest, the charm of naturalness, and brings before us the early life of the writer with a fidelity almost photographic. We have here the evidence of what a man may become under the most adverse circumstances with no other resources than an untiring intellect and an indomitable will.

Born of humble parents, Benjamin Franklin had, at the outset, no further advantages of education than one year passed at such a grammar school as Boston was able to furnish in the early part of the eighteenth century, and another passed at a still smaller educational institution. Of even these advantages he was deprived at ten years of age, and set to work at his father's business of tallow-chandler and soap-boiler. There are few laborers at the present day who have not the opportunities of a better education afforded them under our common-school system. But this brief period of education had developed in the mind of young Franklin an insatiable thirst for knowledge. Of the means by

which he contrived to gratify this desire, he has left us the following interesting account:

"From a child I was fond of reading, and all the little money that came into my hands was ever laid out in books. Pleased with the Pilgrim's Progress, my first collection was of John Bunyan's works in separate little volumes; I afterwards sold them to enable me to buy R. Burton's Historical Collections; they were small chapmen's books, and cheap, forty or fifty in all."—vol. i., p. 108.

This absorbing passion for books having induced young Franklin's father to apprentice him to his brother as a printer, he was enabled to extend his stock of knowledge by borrowing books from the bookseller's apprentices, which he would sometimes sit up all night for the purpose of reading. But he had before him a higher object than mere entertainment. He taught himself arithmetic, which he had not properly mastered at school, and commenced the study of rhetoric and logic. Dr. Franklin has left us a curious statement of the literary condition of America, not only in his youth, but at the period when this first part of his autobiography was written.

"My brother had in 1720 or 1721 begun to print a newspaper. It was the second that appeared in America, and was called the New England Courant. The only one before it was the Boston News Letter. I remember his being dissuaded by some of his friends from the undertaking, as not likely to succeed, one newspaper being, in their judgment, enough for America. At this time (1771) there are *not less than five and twenty!*"—vol. i., p. 115.

Events, in themselves trifling, are often the turning-points in our lives. A quarrel with his brother, who in revenge denounced him to the other printers, induced Franklin to seek for employment in some other city, and failing to find an opening in New York, he proceeded to Philadelphia, with which city his name is inseparably connected. Here his superiority to the Philadelphia printers soon enabled him to procure employment, and in course of time placed him at the head of the business in that city.

The second portion of the Memoirs, commenced at Passy in 1774, and finished at Philadelphia in 1778, except a brief postscript added in the last year of Dr. Franklin's life, was avowedly written for publication, and is, of course, less colloquial and confidential than the earlier manuscript. It is impossible to read this portion of the work without feeling impressed with the extent to which Philadelphia is indebted to Dr. Franklin even at the present day. While still an obscure citizen in a town which at that period did not contain a single bookseller's shop,* he originated, by his own exertions, the Philadelphia Public Library, an institution still existing, and now numbering upwards of

* "In New York and Philadelphia the printers were indeed stationers; they sold only paper, etc., almanacs, ballads, and a few common school-books. Those who loved reading were obliged to send for their books from England."—vol. i., p. 220.

70,000 volumes. He organized the first Fire Company—the Union—and induced the citizens to form themselves into volunteer fire companies. He effected the lighting and paving of the streets of Philadelphia, and laid the foundation of the first public school. Much of this was effected by the aid of the Junta, a literary society which Franklin had organized among the youth of the city, and which eventually became an engine of no small political influence in the province of Pennsylvania.

While thus exerting himself for the improvement of the city of his adoption, Franklin did not relax his efforts for self-improvement. By private study he mastered the French, Italian, and Spanish languages, and acquired considerable knowledge of the Latin and Greek. But his most remarkable project was a scheme he devised for arriving at moral perfection, and which he reduced to writing and carefully put in practice. This scheme, from its very vastness, necessarily failed in its object—but results were accomplished by its practice which are manifest through the whole of Franklin's life.

The autobiography proper terminates with the arrival of Dr. Franklin in England, in 1756, as agent for the colony of Pennsylvania. The remainder of his history is furnished from his correspondence, which has been carefully collected, and is published in chronological order. We have here an account from an eye witness, of the most important period in our country's history—seen from a peculiar point of view—for Dr. Franklin was, during and prior to the Revolution, resident in England and France alternately, and witnessed the progress of events from a stand-point where they were inaccessible to most Americans. These letters, besides their value as a contemporaneous history of the period, possess a charm peculiarly their own. They are shrewd, racy, full of humor and an irony at once delicate and profound, which plays with the same grace around the question of a lady's domestic and social engagements, and that of the British government's ideas of colonial policy. It is characteristic of Franklin, that, while so long domesticated in the centres of the most artificial civilizations in the world, he never appears to have lost his preference for the (at that time real) simplicity of his own country and her institutions. It is probable that at this period many Americans were looking with envy at the state of things existing in the British Islands, and comparing their own condition regretfully with that of their friends in the old country. This disposition Dr. Franklin good-humoredly rebukes as follows:

"If they should ever envy the trade of these countries, I can put them in a way to obtain a share of it. Let them, with three-fourths of the people of Ireland, live the year round on potatoes and buttermilk, without shirts, then may their merchants export beef, butter, and linen. Let them, with the generality of the common people of Scotland, go barefoot, then may they make large exports in shoes and stockings, and, if they will be content to wear rags, like the spinners and

weavers of England, they may make cloths and stuffs for all parts of the world. Had I never been in the American Colonies, but were to form my judgment of civil society by what I have lately seen, I should never advise a nation of savages to admit of civilization, for I assure you that, in the possession and enjoyment of the various comforts of life, compared to these people, every Indian is a gentleman, and the effect of this kind of civil society seems to be the depressing multitudes below the savage state, that a few may be raised above it."– vol. ii., p. 99.

In one respect these letters disappoint us. While presenting a complete portrait of Franklin as a man, a statesman, and a philosopher, we find in them little or nothing respecting him as a man of science. Remembering what has been accomplished by Franklin in the world of science, we might have hoped for some account of his researches in the walks of science. But of this, with the exception of two brief references to the lightning-rod in his letters, we find nothing.

We are, nevertheless, deeply indebted to Mr. Bigelow for the judicious, convenient, and agreeable form into which he has condensed a life of Franklin from his written memoirs and printed correspondence. Few men have bequeathed to posterity a record so instructive. That he was self-taught constitutes only a part, and by no means the chief part, of his greatness. Far from holding the limited ideas commonly entertained by so-called self-taught geniuses, who measure their attainments rather by comparison with their advantages than by their actual value, he regarded no education as sufficient, while more remained to be acquired. Although in science he attained a degree of eminence rarely equalled, he did not consider the time lost that was devoted to the study of languages, as his acquirements in the ancient and modern tongues clearly show. In fact, if there be one characteristic of Franklin's understanding more remarkable than its acuteness, it is its perfect balance; care, study, and finish evidenced in every department; haste and indifference in none. In these days, when men with a small smattering of crude *dicta*, hastily gathered from the pages of some encyclopædia, appear before the world in the character of "scientists," it is refreshing to turn to the study of an intellect where all is symmetrical, thorough, and genuine. That the life and letters of Franklin are less familiar than is to be desired among the present generation, is due mainly to the voluminous, clumsy character of most of the editions in which they have hitherto been presented to the world. In the present collection, Mr. Bigelow has very judiciously supplied a want which has long been felt; and it is to be hoped that the event may prove him to have conferred a permanent benefit on his countrymen by familiarizing their minds with the career and principles of one whom he justly styles "the most eminent journalist, philosopher, diplomatist, and statesman of his time."

Assyrian Discoveries. An Account of Explorations and Discoveries on the Site of Nineveh, during 1873 *and* 1874. By GEORGE SMITH, of the Department of Oriental Antiquities, British Museum, Author of History of Assurbanipal, etc., with Illustrations. 8vo., pp. 401. New York: Scribner, Armstrong & Co. 1875.

MORE than thirty years have elapsed since attention was first directed to the mounds which occupy the sites of the ruined cities of Assyria and Babylonia, and a process of excavation commenced which resulted in the unearthing of a mine of treasure for the antiquaries. Museums have been enriched from the discoveries of Botta and Layard, and vestiges of buildings laid bare which afforded fair indication of the character of ancient architecture. These discoveries, however valuable to the archæologist, were for a long time of little advantage to the student of history. Tablets, it is true, had been found covered with cuneiform inscriptions, which, it was conjectured, contained records of the events of the periods at which they were erected; but, the key to these characters being unknown, the riddle remained unsolved.

When Sir Henry Rawlinson succeeded in deciphering the cuneiform characters, and thus translating for the world the ancient Assyrian records, an important element of value was added to these researches in the light now shed by them on ancient history. The records thus translated were necessarily fragmentary; and this fact, creating a want which necessitated further researches, occasioned the continuance of the former excavations by the author of the present work, who appears already to have supplied several gaps in the historical records which had been previously obtained.

These records, relating chiefly to the time when the Assyrian Empire was in its glory, are, of course, contemporaneous with the Jewish dominion in Palestine, and have therefore a special value in the indirect testimony which they bear to the historical accuracy of the Scriptures. The coincidences are in many instances worthy of note, and the first inscription, deciphered by our author from a tablet in the British Museum, is a remarkable corroboration of the Second Book of Kings:

"I lighted on a curious inscription of Shalmaneser II., which formed my first discovery in Assyrian. On a remarkable obelisk of black stone, discovered by Layard in the centre of the Mound of Nimrod, there are five lines of sculpture, representing the tribute received by the Assyrian monarchs from different countries; and attached to the second one is an inscription which was deciphered independently by Sir Henry Rawlinson and the late Dr. Hincks, and which reads, 'Tribute of Jehu, son of Omri' (here follows the nature of the articles) I received. It was recognized that this was the Jehu of the Bible, but the date of the transaction could not be determined from the inscription. The new text which I had found gave a longer and more perfect account of the war against Hazael, King of Syria, and related that it was in the eighteenth year of Shalmaneser when he received the tribute from Jehu."—p. 10.

The coincidences with Scripture found in these tablets are not, how-

ever, confined to contemporaneous history. They relate to early and traditional periods, and show that facts recorded in early Scripture had been handed down by tradition among these heathen nations. Of the Deluge a full account is given in these tablets, part of which appears in this work for the first time. We are struck with the minute coincidences between the following history of the Deluge, as preserved by Assyrian tradition, with the account given by Moses at a time when he could have had no communication with the Chaldeans.

"Make a ship after this * * I destroy the sinner and life * * Cause to go in the seed of life, all of it to the midst of the ship. The ship which thou shalt make, 600 cubits shall be the measure of its length and 60 cubits the amount of its breadth and height. Into the deep launch it."—p. 185.

"A flood Shamas made, and he spake, saying in the night, "I will cause it to rain heavily. Enter to the midst of the ship and shut thy door."—p. 188.

"The bright earth to a waste was turned. The surface of the earth like * * it swept. It destroyed all life from the face of the earth * * the strong deluge over the people reached to heaven."—p. 189.

"I sent forth a dove and it left. The dove went and turned and a resting-place it did not find and it returned. I sent forth a raven and it left. The raven went and the corpses on the water it saw, and it did eat; it swam and wandered away and did not return."—p. 191.

The tablets also speak of the ancient cities of Erech and Calah, mentioned in the Book of Genesis. Erech appears to have been a great city, although it must have been extinguished at a very early period, as it is nowhere mentioned in profane history. The tablets of the period of Tiglath-Pileser—mentioned II. Kings, xv., xvi.—although very fragmentary, make distinct mention of various sovereigns spoken of in the Bible, and of events commemorated therein. Azariah, King of Judah, Menahem, Pekah, and Hoshea, kings of Israel, Rezin, King of Syria, and Hiram, King of Tyre (no doubt a descendant of Solomon's ally), are all named in them. The defeat of Rezin, mentioned II. Kings, xvi., is commemorated in one of these tablets; also the conquest of the Philistines. The following fragments present a striking correspondence with Scripture. The extract is from a list of cities conquered by Tiglath-Pileser.

"The cities * * nite, Galhi. abil * * which is the boundary of the land of Beth Omri."—p. 284.

Are not these Galilee and Abel-beth-maachah mentioned II. Kings, xv., 29, among the conquests of Tiglath-Pileser, King of Assyria? The land of Beth Omri, of course, refers to Israel, of whose kings Ahab, the son of Omri, was the best known.

"The land of Beth Omri * * the goods of its people and their furniture to Assyria I sent. Pekah their King * * And Hoshea to the kingdom over them I appointed * * their tribute of them I received."—p. 285.

The tablets of Sargon commemorate the conquest of Ashdod, mentioned in Isaiah, xx. The people of Philistia, Judah, Edom, and Moab

are mentioned as having sought the alliance of Pharaoh, king of Egypt, against the king of Assyria. The tablets of Sennacherib speak of the expedition against Jerusalem in the reign of Hezekiah. With characteristic vanity and insincerity, they claim the victory for Sennacherib, but are careful not to mention particulars.

Notwithstanding the interesting information contained in these Assyrian tablets, many of which are now translated for the first time, we must confess that the book, as a whole, disappoints us. Too much space is occupied with rather uninteresting matter, such as the author's account of his travels through regions having no connection with the subject of the work. Even when we come to the really important matter, the translations from the cuneiform inscriptions on the tablets, there is too indiscriminate a mixture in which all the matter of the tablets is jumbled together whether it possess interest or not. For a mere archæological student it will be of advantage to perfect his knowledge by the aid of all the translations ; but in a work intended for the general reader it would have been far better to have confined the extracts to matters of real interest, without inflicting upon him such for instance as this:

"May thy heart rejoice. May thy liver be satisfied; O lord, great Anu, may thy heart rejoice; O lord, great mountain Bel, may thy liver be satisfied. O goddess, lady of heaven, may thy heart rejoice; O mistress, lady of heaven, may thy liver be satisfied."—p. 392.

And so on for a page or more. Of still less use, if possible, are those purely fragmentary translations of which only a word or two in each line are preserved, and with which it is impossible to associate any idea—such, for instance, as the Legend of the Seven Wicked Spirits (pp. 398–402).

One of the most interesting features in this book consists in its illustrations, which reproduce many of the curious sculptures and bas-reliefs of Assyria. The question who the Assyrians were, they do not, however, elucidate very clearly. They exhibit a race short and fleshy—the females especially—with low foreheads, full cheeks, long eyes, and a tendency to flat noses and thick lips, though not at all approaching the physiognomy of the negro. Yet, in contradistinction to these features, which suggest a combination of African and Mongol, their warriors are represented with long beards, a distinguishing peculiarity of the Caucasian race. The biblical chronology represents Asshur as a descendant of Cush, the son of Ham, from whom the Ethiopians are also descended ; but it is well ascertained that what is commonly called the Negro element characterized only a portion of the descendants of Ham; and it clearly did not characterize the inhabitants of Assyria. To which of the great families of the earth these people, once eminent alike for their cultivation, their wealth, and their rapacity, may be said to have belonged, is a question which future discoveries in the mounds of Konyunjik may possibly elucidate.

Ismailia: A Narrative of the Expedition to Central Africa for the Suppression of the Slave Trade. Organized by Ismail, Khedive of Egypt. By Sir SAMUEL W. BAKER, Pasha, M. A., F. R. S., F. R. G. S. 8vo, pp. 542. New York: Harper & Brothers. 1875.

THE expeditions in search of the sources of the Nile, which have occupied the attention of Englishmen for the last fifteen years, have proved the means of calling the attention of Europe to the real secret of the horrors of the slave trade, namely, the practice which has for centuries been established among the tribes of Central Africa of carrying on incessant mutual warfare for the express purpose of procuring slaves to sell to foreign powers, and the establishment of regularly organized companies of slave-hunters from Egypt and Arabia, in the pay of the merchants, and recognized and encouraged by the authorities of this barbarous region.

This was in itself an unconquerable barrier to the elevation of Africa in the scale of nations, and was in fact rapidly depopulating the heart of the country. This state of things demanded the interposition of all civilized nations; and the Khedive, Ismail Pacha, at the instance, and with the co-operation of the Prince of Wales, determined to strike a blow at the nefarious profession by annexing the hitherto savage territory forming the basin of the Upper Nile, and there establishing a government which should prove an efficient protection to the people.

The difficulties attending this expedition appear to have been such that the objects affected can have been attained only by a perseverance and energy almost superhuman. In the first place, the navigation of the White Nile and the Bahr Giraffe is rendered almost impracticable, not only by the constant formation of obstructions from the floating masses of vegetation, but by the constant and sudden changes in the channel itself, which would appear and disappear in a manner to baffle all calculations.

"The immense number of floating islands which are constantly passing down the stream of the White Nile had no exit; thus they were sucked under the original obstruction by the force of the stream, which passed through some mysterious channel, until the subterranean passage became choked with a wondrous accumulation of vegetable matter. The entire river became a marsh, beneath which, by the great pressure of the water, the stream oozed through innumerable small channels. In fact the White Nile had disappeared."—p. 33.

A less serious, but by no means despicable interference, arose from the hippopotami, who appear to have had a weakness for biting boats—and, in fact, occasionally sailors—in two. But the most formidable opposition of all, arose from the inhabitants, who, finding in the slave-trade a source of personal profit, were resolutely averse to all interference with it. Within the dominion of the Khedive, not daring to offer active opposition, they contented themselves with delaying all the

work which they were called upon to perform, in order to render the expedition too late to reach the second cataract in time for the period of high water.

We wish we could proceed to give some details. As it is, we can only direct attention to the work itself, which is a most interesting and valuable contribution to the history of one of the most mysterious regions on the globe. The pictorial illustrations, including portraits, maps, etc., considerably enhance the value of "Ismailia," which, as a whole, may be regarded as a very excellent specimen of "expedition narrative."

SCIENCE.

Manual of Political Ethics. Designed chiefly for the use of Colleges and Students at Law. By FRANCIS LIEBER, LL. D. Second edition, revised. Edited by THEODORE D. WOOLSEY. 2 vols., 8vo. Philadelphia: J. B. Lippincott & Co. London: Trübner & Co. 1875.

IN these days, when political morality is at so fearfully low an ebb, when patriotism is in so many cases but a mask for self-interest, and when corruption walks abroad unblushingly, or sits boldly in high places without disguise, it is gratifying to meet with a work which treats the subject of politics from an elevated and disinterested point of view; or which, to adopt its own phrase, discusses the *ethics* of politics—an aspect in which that science appears of late to have been overlooked. It is true that this is not a new work. The first edition appeared as long ago as 1838; but it is doubtful whether at any time since that period its teachings have been more needed than at present; and should this second edition have the effect of awakening the minds of the rising generation to the consciousness of the fact that in political life there are such ideas as morality, justice, and integrity, which, even as a matter of policy, it were well not to ignore—it will not have appeared in vain. The fundamental idea intended to be conveyed by the term "political ethics," is the application of the individual conscience to the principles of natural law, and political science; or, in the author's own words,

"to ascertain by what moral principles we ought to be guided in certain specified poiltical cases, and what it is that experience points out as the wisest course for a conscientious citizen, under the law and in relations established by the two former sciences."—vol. i., p. 72.

It is characteristic of the German parentage of the work, that it commences its treatment of the subject from a very early stand-point, devoting a considerable portion of the first volume—that styled Book I.—to the consideration of the human intellect, and especially the moral nature, and a discussion of the science of ethics generally, and its application to politics in particular. No less characteristic, perhaps, is the

spirit in which these subjects are discussed—a spirit which ignores all appeals to the baser passions of our nature, and addresses itself at once to its most exalted instincts—those of a nature not yet degraded.

"Superior intellect, peculiarly expansive and refinable sympathy, freedom of will and rationality (or self-determination of volition), and conscience, constitute man's ethic character—his moral dignity, the acknowledgment of which alone is sufficient to make us at once conscious of the great law, 'Thou shalt not debase, in thyself or in any fellow-man, man's moral dignity;' a fundamental law from which we derive, in ethics, the duty of man; in natural law, his rights."—vol. i., p. 53.

The second Book treats of the theory of the state. As a theoretical treatise this part is admirable; the views are profound; the ideas, in many instances, novel and striking. It is true that among the mass of readers these characteristics would in some degree impair the practical efficacy of the work.

As a manual for schools and colleges, of course, this objection does not apply to it. Where it is studied thoroughly and acquired by easy stages, the establishment of the knowledge of the theories of mind and government is invaluable as a foundation for the practical instruction which is to follow. We must, however, differ with the Professor with regard to his claim that the property in a book, commonly called copyright, is the natural right of the author like any recognized property; or, in his own words,

"The right of property in a book seems to be clearer and more easily deduced from absolute principle than any other."—vol. i., p. 122.

It is strange that the Professor does not perceive how effectually he has himself disproved this theory by his subsequent admission:

"It seems very clear to me that the shortest term for which copyright ought to be secured by law, is the life of the author and his next heirs, if both are not less than sixty years, the average time of two generations; but I strongly incline to believe that a century would be a proper term."—vol. i., p. 123.

If property in literary productions were a natural right, it would necessarily be inalienable unless by the author's consent; and would, therefore, continue in him and his heirs, not for sixty years, nor for a century, but forever, until aliened by them—a right which Dr. Lieber does not claim, and which, we believe, is nowhere seriously claimed. The true argument in favor of copyright lies in the fact that justice and public expediency unite in requiring that an author be secured the means of ensuring a proper remuneration for his literary labors.

The practical and important portion of the work commences with Book III., near the close of the first volume. Here, at the outset, is a suggestion which our people will do well to consider:

"Private virtues may exist without a sufficient attention to public ones."—vol. i., p. 398.

It is certain that in our country private morality, though sadly de-

teriorated from its former standard, continues to occupy a high rank in public estimation, and that, in this respect, we compare favorably with many other nations. Whence, then, has arisen the frightful decay of morality in our public officers, but from the feeling that has become too prevalent, that the conservation of the morals of public life forms no part of the duty of the private citizen? The virtues, of which the cultivation is most important in the study of political ethics, are succinctly set forth as follows:

"Of all the virtues peculiarly important in politics, the chief place must be assigned to justice and fortitude or perseverance; for honesty and moderation, without which no State indeed can last or flourish, may be comprised within the first, if we take it in its widest sense; yet they deserve particular mention. Justice and fortitude may well be called the two elementary virtues of every citizen, no less than of the statesman in particular."—vol. i., p. 401.

Under the head of justice, honesty is very properly included; yet it receives particular mention in a subsequent chapter, and with reason; for there is no virtue of whose absence we, as a people, and more particularly in our metropolitan community, have felt so terribly the baneful effects. With what fearful fidelity does the following passage ring out the symptoms of a diseased condition, too many of which we recognize with pain, as characterizing our municipal government:

"So soon as dishonesty is a general crime, so soon as public places are considered by common consent as fair opportunities to enrich their holders, willing to wink at each other's embezzlements, so soon as parties consider themselves by their success entitled to the spoils of the public, so soon there is a deadly cancer in the vitals of that society, and hardly any thing but severe changes and revolutions can save it. *Justice will be sold, bribes become common*, public opinion become vicious, veracity will be disregarded, patriotism be derided, every memory of greatness or nobleness be disgraced, *oppression in every degree become general*, and the moral tone of society at large, which must always remain the first spring from which public prosperity flows, will vanish."—vol. i., p. 464.

The ethical question is followed into all the details which can, in any manner, be brought to bear upon public life, even such subjects as gratitude, continence, religion, and calmness of soul. Nor is this an error. All these qualities, if essential to man's happiness as an individual, are no less important in his relations to his fellow-citizens; all are qualities of which the presence or absence in the masses will be sensibly felt, and be as manifest in its effect on the public weal, as in its influence on the life of the individual.

It is almost superfluous to say that we most cordially recommend this work—written by one who, though a stranger by birth, was long a resident among us, and understood well our needs—to the perusal of all who entertain a sincere desire for their country's welfare.

Ten Years with Spiritual Mediums, an Inquiry Concerning the Etiology of Certain Phenomena called Spiritual. By FRANCIS GERRY FAIRFIELD, 16mo. pp. 182. New York: D. Appleton & Co. 1875.

As nearly as we can comprehend it, the theory of this little work is as follows: 1. That the phenomena commonly called spiritual manifestations actually exist; 2. That they are not effected by the operations of disembodied spirits, but by certain forces called psychic in the medium —or, in the words of the author,

"Here are so many persons—one in a thousand, possibly—who are competent to produce certain phenomena. They are not persons of superior organization, physical or cerebral. Some of them, indeed, are of very low organization—physically and intellectually. The question for scientific inquiry, then, is not whether these phenomena involve the presumption of superhuman intervention, but by what perversion of nervous functions the medium is enabled to produce them."—p. 27

That there are certain persons called mediums, who possess a quasi-electric power of operating upon, or disturbing material objects external to themselves, and not unfrequently without volition or even consciousness on their part, is an undoubted fact. It is also certain that these mediums are usually persons in a somewhat deranged or abnormal state of health. But to these admitted facts the author adds instances of manifestations of a more questionable nature—such as phantoms appearing to himself and other spectators, messages written on paper by visible, bodiless hands, warnings from mysterious voices, etc., etc., some of which he cites as occurring within his own experience, and others which he claims to have been authenticated by unimpeachable testimony.

The theory by which he explains all these phenomena, is to the effect that we are encompassed by a certain *nerve-atmosphere*, which acts upon us, and on which we re-act; and that persons in the abnormal condition which constitutes a medium, can sometimes, in the exercise of their volition, sometimes even unconsciously, read the thoughts of others who come within the sphere of their nerve-atmosphere, impart utterances to them in audible voices, and even

"Produce a visible phantom and control its movements; or may even visit a person living at a considerable distance as an apparition, write a message, and float away or waste into the invisible."—p. 172.

How far this explanation will prove satisfactory to most readers, we cannot pretend to say. If the so-called manifestations to which the author bears testimony were only established by incontrovertible evidence, we would be ready to accept almost any explanation which accounts for them on physical principles, even where those principles are mostly hypothetical, rather than believe that phenomena so utterly irrational proceed from the spiritual world. But, in the first instance, we require proof that the incidents recited have actually occurred—and under circumstances which preclude the possibility of deception or de-

lusion—before we can seriously enter upon a discussion as to their probable causes. It is to be regretted that, in place of some of the numerous "instances" with which the volume is filled, the author did not furnish a little of the testimony by which the others are authenticated. Let us be once well assured of our facts, and then we will be the more ready to attend to the explanations.

BELLES LETTRES.

Hazel Blossoms. By JOHN GREENLEAF WHITTIER. 18mo., pp. 133. Boston: James R. Osgood & Co. 1875.

WHATEVER be the faults of the poets of this generation—and they are neither slight nor few—it is certain that they have infused into their poetry an element of actuality characteristic of few writers of an earlier day. No longer confining themselves to the ideal, they grapple with the sternest realities of life. Nor does this preference of the actual necessarily diminish the poetical character of their effusions; for in the very poems which ring out most clearly the echoes of life, do we find most of the graces of the imagination which render them more impressive. It is this element that renders the poetry of the present day the vehicle of some of the greatest truths, and which gives it its profoundest pathos. Few can read Whittier's Maud Muller and Barbara Fritchie without a sense of the intensity, the deep thought, the pathos, evolved from this very element, and which often derives an additional grace from the very homeliness of the principal incidents.

Of these qualities we have one or two striking instances in the memorial poem on Sumner which forms, as it were, the *pièce de resistance* of the present volume. The poem itself, as well as the subject of which it treats, is too familiar to require comment; but, when both have faded into the dim distance of the past, the truths which these lines signalize will be appreciated:

> "One language held his heart and lip,
> Straight onward to his throne he trod,
> And proved the highest statesmanship
> Obedience to the voice of God."—p. 19.

> "His statecraft was the Golden Rule,
> His right of vote a sacred trust;
> Clear over threat and ridicule
> All heard his challenge: 'Is it just?'"—p. 27.

A truth not dissimilar is conveyed in a poem of a very different kind—"The Friend's Burial."

> "The dear Lord's best interpreters
> Are humble human souls;
> The Gospel of a life like hers
> Is more than books or scrolls.

"From scheme and creed the light goes out;
The saintly fact survives;
The blessed Master none can doubt,
Revealed in holy lives."—p. 45.

Of the poems in this collection one only can be said to possess the genuine ring of Whittier's earlier effusions. We refer to that entitled "John Underhill," which we consider, in some respects, the best in the volume. The admirers of the poet will recognize many of their old acquaintances as well in the character of the story as in the peculiarities and occasional quaintnesses of its style. John Underhill is a Puritan Captain who has gained renown both in New England and Flanders, but is banished from the Massachusetts Bay Colony for adhering to the doctrines of Anne Hutchinson. Earnest and pious, he has fallen into the common error of believing the possibility of attaining, even in this world, a state of grace from which there is no risk of falling:

"The world might bless and the world might ban:
What did it matter the perfect man,
To whom the freedom of earth was given,
Proof against sin, and sure of heaven?"—p. 48.

He repairs to Hilton Point, and is there received by the settlers, to whom he recites the story of his religious experience;

"A sudden sweetness of peace I found,
A garment of gladness wrapped me round;
I felt from the law of works released,
The strife of the flesh and spirit ceased,
My faith to a full assurance grew,
And all I had hoped for myself I knew."—p. 50.

The settlers gladly receive him, and he is elected Governor of Cocheco. Here he distinguishes himself by the excellence and justice of his administrations. But by degrees a personal temptation assails him, of which the nature is but hinted;

"A whisper of scandal linked his name
With broken vows, and a life of blame."—p. 52.

He has succumbed, and his faith in himself, and the faith of the people in him, are at an end. After a long period of internal conflict, he finally summons the people, acknowledges his sin, and still more frankly his mistake in supposing himself beyond the power of falling, and resigns his trust.

The remainder of this collection consists of fugitive pieces, in many instances of a personal character, and more remarkable for grace and elegance than for the fresh and strong genius which characterizes Whittier's works. They will accordingly be welcomed by the admirers of the poet, but will not add to the fame of the author of Sir Launfall. An exception should, however, be made in favor of the introductory

stanzas, to which alone the title of Hazel-Blossoms is appropriate, and which possess a sentiment and beauty characteristic of Whittier:

> "So in the wise Diviner's hand,
> Be mine the hazel's grateful part
> To feel, beneath a thirsty land,
> The living waters thrill and start,
> The beating of the rivulet's heart."—p. 11.

The poet has appended to this volume a touching memorial of a deceased sister, in the form of a few lyrical pieces written by her. These, few in number, and never intended for publication, appearing now simply as a mourning brother's tribute, are, of course, no subject for the reviewer. We, though strangers, can but reverently echo the comment of the brother on one of her poems. "In the lines on Dr. Kane her friends will see something of her fine individuality—the rare mingling of delicacy and intensity of feeling which made her dear to them."—p. 8.

EDUCATION.

Architecture for General Students. By CAROLINE W. HORTON. With Descriptive Illustrations. 18mo., pp. 275. New York: Hurd & Houghton. 1875.

THE study of architecture is one to which we are always glad to have the public attention directed. It may be remembered that the opening pages of our last December number are devoted to an article on the subject. It is something novel, however, to find this topic discussed by a lady, in the form of a text-book, designed, as we infer from the dedication, principally for young ladies' schools. We feel, however, that, in preparing this little volume for the use of her former pupils of the well-known Gannett Institute, Boston, and other readers of the same cultivated class, the authoress has contributed a valuable and much-needed addition to our educational library. If we are ever to have good architecture, something must be done to extend the knowledge of the art; for so long as its principles are comprehended by architects alone, just so long will the national architecture remain at a low standard. Architects, like other manufacturers, will not, unless exceptionally conscientious, furnish better material than the public taste demands; and the public taste will be rarely, if ever, cultivated to the point of art without at least some general knowledge of the principles on which that art is founded.

The object of the work before us is to convey, in simple language, a general idea of the fundamental principles of architecture, and of the styles that have prevailed, and continue to prevail, in the leading capitals of the world. With this view, few technical terms have been

introduced; and of those which are inevitable, not only are the significations carefully explained in the first instance, but they are rendered easy of recall, if forgotten, by the aid of a glossary, appended to the volume. The essential parts of a building having been succinctly set forth in the first chapter, the work proceeds with an account of the styles which are best known, commencing with the ancient Assyrian structures, as discovered by the researches of Layard and others, and continued through the Egyptian, Grecian, Roman, Mediæval, and Renaissance styles, to the familiar architecture of the present day.

The description given of the Assyrian buildings reveals a species of architecture entirely dissimilar to that of any nation of which we have any definite knowledge, and presents some singular points of resemblance to the structures of the Toltecs found in Central America.

"The excavations referred to show that the Assyrian buildings were raised upon terraces, and consisted of narrow, corridor-like apartments, irregularly arranged around an open court, and, apparently, without any idea of symmetry in their collocation. The different stories arose one above another in terraces, and from the sculptures found, it may be inferred that the flat roofs of the lower terraces often formed small pleasure grounds, planted with palms and cedars."—p. 35.

This peculiarity—the elevation on terraces—is a distinguishing feature of the pre-historic American cities. The gigantic monolithic figures—commonly called idols—which line the interiors, towering far above the walls, suggest the idea of supporting an upper terrace or story, while the forest trees which grow out of the very floors may not impossibly be the development of some such hanging gardens as those of Nineveh and Babylon.

In the chapters devoted to Grecian architecture, we have considerable detail, including the characteristics of the different styles, and illustrated by engravings, which not unfrequently convey a better idea than the verbal definition. This minuteness is rendered proper from the fact that the Grecian forms still an important element in modern architecture, both in the so-called classical structures which are still occasionally erected, and in the more modern form of the Italian.

Speaking of Girard College, Philadelphia, Miss Horton very justly says:

"As a whole, it fails to excite in the beholder any of that emotion which is awakened by the Grecian edifice. Cold and unimpressive, it seems rather like some rare exotic, a thing to be gazed and wondered at more than enjoyed. This is, no doubt, attributable, in part, to its position; for, while the Greek temple always crowned some lofty height, or some jutting spur, this edifice is built in the middle of a broad, flat plain, without any relief from the blue sky, or jagged mountain-side. Again, the substitution of straight lines for those curves which brought the Greek edifice into such wondrous harmony, must detract much from its beauty, while the lack of sculpture, to say nothing of polychromatic ornament, will ever render such a building a futile attempt at the reproduction of classic art."—p. 254.

Much space has been judiciously devoted to the Renaissance

school, which, in its more modern forms, has become the favorite style of the present day. We do not altogether agree with Miss Horton in her condemnation of the extensive adoption of this style which characterises our modern cities; for we can think of none which, for the purposes of street architecture—*i. e.*, where a symmetrical effect is to be produced by the juxtaposition of several buildings—will be found more suitable. We are quite of her opinion, however, that it is to be regretted that our architects so constantly select the French Renaissance—not unfrequently including the absurdities of Bernini and Borromini—in preference to the chaste elegance of the Venetian and Genoese models. We also approve our author's suggestion as to the occasional employment of the Gothic style for large public buildings where an independent effect is required, as in the Memorial Hall of Harvard College, and the Boston Museum of Art, instanced by her.

The mixtures of styles in which our younger architects are apt to indulge—less, however, at present than in the structures of twenty or twenty-five years ago—are justly criticised in the following terms:

"There are edifices in New York and Boston, as well as other cities, which remind one of Da Vinci's Rotello del Fico, for it seems as if the architecture of every nation and every age had been gathered together, that the builder might choose a portal here and a window there, an entablature from Greece, a column from Assyria, and a turret from the mediæval age, and crowd them all together without any regard to their adaptation one to another."—p. 261.

We need hardly add that the book is well written, and calculated to impart, in an easy and agreeable manner, the amount of information on the subject of architecture which it is desirable intelligent persons should possess. It is not necessary that every citizen should qualify for an architect, but it is important that every one should acquire sufficient knowledge on the subject to enable him to distinguish the really good in architecture from the tawdry shams with which it is so often confounded, and with this knowledge, by forming public taste and opinion, secure for the future a style of architecture worthy of a great nation. This fact Miss Horton appears to have fully appreciated, and she is entitled to the gratitude of the community for her efforts to extend among the rising generation the taste which is needed, and the knowledge without which true taste is impossible.

We expected much when we learned that the work before us was written by one of the instructors of the Gannett Institute; but we cheerfully admit that our expectations have been more than realized.

The Franklin Globe Manual. An Aid to the Study of Geography and Astronomy, with the use of Artificial Globes. 12mo., pp. 74. Troy: H. B. Nims & Co.

It is to be regretted that, while the study of geography has always been recognized in our schools as an essential branch of even the most

elementary course of education, comparatively little attention has been given to the study of the globes. The importance of this department will appear on very little consideration. In geography, as usually studied, the pupil is assisted by an atlas—a collection of maps, or projections of different portions of our planet on a flat surface, and conveying but a limited idea of the relative positions of the principal sections of the world.

Not that we would for an instant seem to underrate the importance of the atlas in the study of geography. In fact, it is the only mode in which the local divisions of particular tracts of country can be studied at all. To reduce all the geographical details of the State of New York, for instance, or the Kingdom of Great Britain and Ireland, within the narrow compass that could be allotted to those regions on the surface of a globe, would be difficult, if not impossible; therefore, full information can be acquired only by means of an atlas which embraces all the minute details—such an atlas, for instance, as that of Mitchell, published by Butler & Co., Philadelphia. But for the bearings of our whole planet there is nothing to supply the place of the globe. Here the student is shown the oceans, continents, and islands, as nearly as possible in the positions which they actually occupy on the surface of the earth.

When we come to the study of astronomy the use of the globes is indispensable. The altitude and azimuth of a celestial body, the declination and right ascension of the sun, the difference between apparent and mean time, can, of course, be ascertained by an elaborate process of calculation which is, however, to be comprehended only by a student of the higher branches of mathematics; but the simple and beautiful problems which are worked out by the aid of the globes bring this knowledge within the reach of the ordinary school-boy, and fix in his mind, in a brief space, the results of the studies which have for ages occupied the attention of the learned. In the acquisition of the knowledge required for the study of nautical astronomy these problems are invaluable.

The Franklin Globes, for which this little volume is principally designed as a companion, are in many respects a great improvement on the old-fashioned globes which are still in use in too many of our schools—globes which, to a certain extent, justify the prejudice which exists against them as a study, by perpetuating numerous geographical and astronomical errors that later researches have exploded.

Those who resolve to procure either the terrestrial or celestial globe, or both, should bear in mind that in all parts of the country the market is glutted with globes which are called "cheap," but would really be dear at any price. The way to avoid these is to bear in mind that the boundaries, rivers, lakes, mountains, cities, etc., on the terrestrial globe

should be carefully examined by a competent person, and their relative positions compared to those which the same occupy in a standard atlas. The celestial globe should be subjected to a similar test. Then the style of manufacture, and the durability of the *tout ensemble*, should be taken into account.

For our own part, we have seen no better globes anywhere than those which very appropriately bear the name of our great philosopher. Accordingly, it is these we use ourselves, and, as our friends know, have used for many years; and there are not many of the best books in our private library which we prize more highly, or would part with more reluctantly, than our high bronze pedestal Franklin with its quadrant of altitude, and other accessaries.

Catalogue of the Selleck School, Norwalk, Conn., 1875.

THIS modest brochure recalls to our mind a most agreeable train of thought. Some of the peculiar merits of the Norwalk institution are known to our readers, but its true character can be realized only by those who have witnessed its system of teaching, or whose sons or wards afford illustrations of its characteristic results.

We have repeatedly assured our readers how much more willingly we commend a really good school, than we criticise a bad, or indifferent one. But that of Mr. Selleck we sincerely admire; and the more schools of the first-class we see, the more confident we feel in regarding it as a model.

As it is so much the habit at the present day to attribute all emphatic approbation to selfishness, we hope we shall be excused for informing the reader that, instead of our wishing to profit by the excellence of this School, we evinced our appreciation of that excellence by respectfully declining to accept any price for a set of the Review ordered by the Principal, although we had never seen the gentleman but once—that is, while he was at his work as an educator. And it is in the same spirit of esteem and regard for true, unobtrusive merit that we make these remarks, on being reminded of the School by its catalogue.

Mr. Selleck is not one of those educators who, if successful, will make no new effort. He is always devising improvements, not because he wants to make money, for there is no one to whom money presents less inducement, except so far as it enables him to develop the noble work upon which he has set his heart. His ruling motive is his determination to make his School *tell* to the advantage of his pupils.

We see that he has been occupied lately in selecting the most competent heads for the various departments. Thus, for example, the classical department is now conducted by an experienced, efficient tutor,

who devotes his entire energy to the classes in ancient languages. Another instructor, equally competent in his department, has charge of the principal modern languages. A graduate of West Point, eminent for his abilities and success as an instructor, is at the head of the higher mathematics. The natural sciences are taught by one equally experienced, skilful, and successful in interrogating nature. Even penmanship is taught by one who is required to do nothing else. In short, no educator is more conscientious than Mr. Selleck; certainly no head of a preparatory School in America is more thorough.

We are quite aware that to many we shall seem to make an incredible statement when we say that there are not a few of our so-called universities which are inferior to this School; but such is our sincere, deliberate opinion. Thus, for instance, we merely present one of the results of researches carefully and impartially made, when we assure our readers that we should have much more confidence in sending a pupil to the Norwalk School than to the University of Pennsylvania, the Lehigh University, or the University of Rochester—three institutions that have a wonderful family resemblance.

Mr. Selleck's School has a "Navy Department," which may be regarded as more than an organized system of recreation.* The students are taught to row over regular courses, according to the rules of the best-managed boat clubs. In the encamping excursions made in summer the "Navy" boats are used as transports. The School has houses on two islands in the Sound, where the students and their teachers occasionally pass the night during the warm season.

We give this meagre outline of the characteristics of the Norwalk School by way of replying to many letters of inquiry we have received, from all parts of the country, since June last. Neither the principal, nor any of his assistants or friends, have ever asked us to do any thing of the kind. That we have not done so because Mr. Selleck is an Episcopal clergyman is sufficiently proved by our criticism in another article in this number, on the peculiar systems of ethics, vulgar fractions, etc., taught by a distinguished Rt. Rev. Divine of the same church. Nor have we taken these pains under the impression that the Norwalk institution is in any need of patronage. Sometimes, indeed, we meet excellent schools which are not appreciated according to their merits; but not in New England, to the honor of its intelligent, shrewd people be it said. We cannot, therefore, conclude these hurried observations more appropriately than by applying to Mr. Selleck's School the line of Plautus:

"Sat habet favitorum semper, qui recte facit."

* Our readers may remember that several years ago we gave our views of the influence of aquatic sports among the ancients, as well as the moderns, under the title, *Yachting not merely Sport.*—*Vide* N. Q. Rev., No. XLII., Sept., 1870.

Address before the Association of School Commissioners and Superintendents, at Syracuse, Dec. 29, 1874, *upon Uniform Examinations for Teachers.* By Dr JOSEPH E. KING, of Fort Edward Institute.

WE have seldom read any publication, of equal length, on the teaching and teachers of this country which contains so many valuable suggestions, or so many startling but undeniable facts as this. It does not at all surprise us, however, considering the source whence it comes, for we could not but expect much from an educator of the experience, abilities, and success of its author. We need not remind our readers what our own views are as to the conditions upon which candidates for the positions of teachers should be employed, or even allowed to teach, since we have maintained for fifteen years, in this journal, that one should no more be allowed to announce himself as a teacher of youth without having undergone an examination, than he should be allowed to practise law or medicine without having been subjected to a similar test. After giving an outline of a system of examination from which none who aspire to teach, even in primary schools, should be exempt, Dr. King proceeds:

"Something is out of joint in the times, and in those who are responsible for public opinion, when that department of labor which pre-eminently requires *skill* should give almost unchallenged admission to its laboratories, wherein they are to be manipulators of immortal minds, to *ignoramuses, humbugs, and quacks.* What other sort of skilled labor admits of this anomaly? The maker of earthen jugs and pots must serve an apprenticeship; the groom for our horses must understand his work; but, forsooth, the person to whom is to be committed the education of future citizens of the Republic *may be anybody out of a job.*"

No one whose opinion is of any value will deny the truth of this. Will the "ignoramuses, humbugs, and quacks" abuse Dr. King as they have us? Evidently he cares as little for the indignation or resentment of the whole pack of imposters as we do ourselves, and that, as our readers will bear us witness, is not much. How many of those we have portrayed in these pages, within the past year, will recognize themselves in the following *morceau:*

"Academies and high schools will do good work if they have a chance—deliver good grists, if wheat is brought to their mills and they are allowed to grind it. *The crucial test of required uniform examinations will unmask the humbugs and frauds,* and bring mere 'cheek' to a modest confession *of its ignorance.*"

Let those who think we have been unduly severe—if any such there be among the intelligent class—ponder on this. Some may think that Dr. King only alludes to the teachers in primary schools—that is, to a much lower grade of "masters" than those whom we have sketched in outline. But we have the most convincing evidence that such is not the case. We can testify that his descriptions embrace even ministers of the Gospel—that is, such as pretend that, because they can preach very dull, indifferent sermons, it must follow that they are superior

head-masters. Instance, poor Rev. A. B. Blakesley, "East Greenwich Academy of Boston University," in regard to whose miniature, as taken in passing, by us, the sturdy and fearless author of the above Address writes as follows:

"I have read your further contribution to educational literature with thorough interest. Probably I am not quite as capable of enjoying a handsome surgical operation when the subject is a *Methodist*, as when he is only some pagan fellow or other; yet I plead guilty to feeling entertained whenever and wherever *a pretentious humbug is exposed.*"

Nor was this any "confidential" or "private" utterance; otherwise we would not make it public in connection with the author's name. It was written and sent because Dr. King is one of those educators who have thoughts of their own, and do not hesitate to give expression to their thoughts, let who will pout, when they believe they will serve the great cause. But we must make room for one extract more. Referring to the "officers set to keep the House of Knowledge in order," our unflinching educator-critic proceeds:

"*Something* has been done. The rubbish in several places has been cleaned out by infinite pains; here and there a tower has risen higher than the common level; here and there a new French roof has appeared, or a dormer *window has let in a good deal of light. Alas! that this light, so rich and so fruitful of all good, is monopolized in a few favored centres. To this vast labor of levelling up the whole superstructure of our educational system, no one man is equal; no ten men are equal.*"

The only comment we need add is, that we heartily thank the correspondent who has sent us this "Address," and earnestly wish that he could send us many others like it from as many educators in different parts of the United States.

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1. *Fiftieth Annual Register of the Rensselaer Polytechnic Institute.* Troy, N. Y. 1874.
2. *The Polytechnic Bulletin; a Monthly Record of Scientific and Industrial Progress.* Philadelphia: Polytechnic College. 1874.

ONE of these brochures was so late in reaching our table that it is impossible for us to do more on the present occasion than give a hasty glance at each. Fortunately, we are not obliged to depend on either for our information, since we have visited both institutions. Moreover, the Rensselaer Institute is one of the oldest and best known scientific schools in America. It was founded in 1824, and has always maintained the highest rank among the similar institutions of our country.

It is our privilege to have known its Director, Prof. Charles Drowne, A. M., C. E., as an educator, for twenty years—by far the greater part, if not the whole of this time, in his present position. Neither in public nor private have we ever spoken of that gentleman, as a scientist or instructor, but in the language of esteem and approbation.

For the first time in fifteen years, we visited the Polytechnic Institute, a month ago. To us, it was a very interesting coincidence that, on our last, as well as our first visit, we found Prof. Drowne engaged in delivering a lecture to a large class of young gentlemen, on Mechanics. Having kindly welcomed us, and invited us to a seat, he proceeded with the facility and self-possession of one thoroughly acquainted with his subject, in all its ramifications. We do not pretend to know much about bridge-making; nevertheless, we can truly say that we have seldom been more strongly impressed than we were by Prof. Drowne's graphic, vivid descriptions of recent improvements in the construction of bridges of wide span. Those aware that the engineers instructed and trained at this school occupy the highest positions in practical engineering, in all parts of the United States and British America, will be glad to know that it was never in a more flourishing condition than it is at present; and time deals so gently with the faithful, genial director, that we may expect it will continue to improve under his enlightened, judicious management, for decades to come.

The Polytechnic College is young, compared to the Polytechnic Institute, the former having been founded nineteen years later than the latter—in 1853. The master-spirit of the Philadelphia institution is Dr. Alfred L. Kennedy, President of the Faculty. He has all the enthusiasm, as well as the learning and abilities, of a good educator.

On a future occasion we mean to give a sketch of the results Dr. Kennedy has accomplished. We can do no more now than to remark, that the College comprises five technical schools, namely: The School of Mines, the School of Practical Chemistry, the School of Civil Engineering, the School of Mechanical Engineering, and the School of Architecture.

In short, if the Polytechnic College were not a really good institution of its class, we should not speak of it in the same page with the Rensselaer Institute, except by way of contrast. This will be the more readily understood when we assure our readers that we have visited several so-called "scientific institutions" in New York and other States as well as Pennsylvania—concerns of the loftiest pretensions—whose professors have apparatus and instruments in some of their "departments" of which they do not know the use. This may well seem incredible, but be it remembered that large donations are sometimes made by men who are richer in money than in intelligence or knowledge. These well-meaning people send the merest smatterers in "science" to London, Paris, or Berlin—perhaps to each—in order that they may secure a fine variety of instruments. In several instances we have seen collections thus procured exhibited to visitors just as the wild animals are exhibited at Barnum's Hippodrome by persons whose knowledge of natural history is very limited. It is only those who have seen the

working of these "scientific" *shows* that can fully appreciate schools like the Rensselaer Polytechnic Institute, and the Polytechnic College of the State of Pennsylvania.

MUSIC.

1. *Prince's New Method for Reed Organs. A Comprehensive and Progressive School for the Cabinet Organ and Melodeon.* pp. 127. New York: S. T. Gordon & Son.
2. *Zundel's New School for Reed Organ.* pp. 127. New York: Same publishers.

We have found a general similarity in the method of the above works, which renders them proper subjects for joint notice. Both, although especially intended for the melodeon or reed organ, are equally adapted for the piano-forte with the Æolian accompaniment, and would be very good books of preparatory instruction for the regular church organ did they contain any information as to the use of stops. Lacking this, however, they are only suited for beginners on the less pretentious instrument mentioned in the title-page.

The rudimentary part in the first of these two works—Prince's—treats the subject rather more fully and in a more agreeable style than the other, but it has the not uncommon fault of assuming knowledge on the part of a pupil, which the beginner—and for no other class of pupils are these works adapted—cannot be expected to possess. For instance, the meaning of *tone* and *semitone* is not defined, although these terms are used in expounding the Diatonic Scale. In like manner the pupil is assumed to know the object of the single and double bar—for it is nowhere explained in the book. In these respects, Zundel's work is more satisfactory, greater care having been bestowed on the points of preliminary instruction, which are essential to an elementary work.

We likewise prefer Zundel's arrangement of the scales, giving each major its relative minor, and regulating the exercises accordingly. Prince has arranged them according to the position of the notes on the staff, which is unscientific, and calculated to confuse the learner.

The instructions for fingering are better in Prince's method; his rules are very good, and stated in a manner to be easily comprehended and retained. Both works have adopted a very good system of prefacing each exercise with some simple instruction particularly adapted thereto. By this system the lesson learned is immediately put in practice, and makes a permanent impression.

APPENDIX—INSURANCE: GOOD, BAD, AND INDIFFERENT.

Annual Statements, and other Official Documents, of Life, Fire, and Marine Insurance Companies.

No other business, or profession, exhibits such striking contrasts, in a moral, or, rather, *immoral* point of view, as that of Insurance. We give the preference to the epithet "immoral," because the overwhelming preponderance in number, as well as in pretensions, is on this side; because, for every one company, whether life or fire, that pursues a straightforward, honest, and honorable course, there are at least twenty companies that obviously have no higher aim than to obtain as much money as possible from the public and return to it as little as possible.

This, however, is nothing new; but the contrasts become more remarkable from year to year; nay, from month to month; and who, that has a thought in his head, could expect a different state of things, since four-fifths of those who insure their lives give the preference to those who evince most adroitness in the art of defrauding the widow and the orphan? Our people claim to be the most intelligent in the world, and, at the same time, no people on earth are so easily, or so habitually duped. Regarding them ornithologically, they are the species of birds which, above all others, are most easily caught with chaff. Among no other tribe can the vultures, the ravens, and the buzzards fatten with less trouble or danger to themselves.

None have given more illustrations of the different grades of underwriters than we; nor has any one taken more pleasure in commending the faithful and just. In the present article we pursue the same course, but in a somewhat modified form. In criticising certain companies, upon the other hand, we disclaim all intention of doing injury to any one, further than to give our opinions of the facts in our possession, for the public good. We investigate as far as possible, and employ competent persons, in whose integrity we have confidence, to investigate for us; at the same time, we cannot pretend to vouch for the strict accuracy, in all particulars, of every statement we make; although we make no statement, or even allusion, which we do not believe to be true and just. If, after observing every precaution that occurs to us as proper or necessary, we wrong any one, our pages will always be open to those desiring to vindicate themselves, in a fair and temperate manner.

The official statements of the various Insurance Companies for 1874 are now in hand, and we are ready to fulfil, as best we can, our promise of examining them, and ascertaining how they compare with the reports for 1873. But, before turning to these statistics, we wish to call attention to a recent alleged performance of one of the fattest of the companies, which, although published in several daily papers, has hitherto failed to attract the comment it deserved.

It may be remembered that in our December number we spoke of

the mortgage system as one of the favorite instruments of oppression in the hands of some very "beneficent" companies; but we were not prepared for so prompt an illustration of the actual working of that system as the one with which we were presented not long afterward.

If we are correctly informed, the Equitable Life Assurance had loaned $35,000 to Alexander H. Stevens on his property in Chambers street. This property, we should think, ought to have been sufficient to cover the amount loaned, the company being one of those which profess never to lend on property not worth thrice the amount of the loan. However this may be, the mortgage, it seems, was foreclosed. Mr. Stevens was dead, and the panic in real estate had made it a very good time for making a profit on the transaction. The company managed to buy in the property for the sum of $38,500, which, though considerably exceeding the amount of the original loan, was insufficient to pay the interest, costs, and expenses which had accrued, so that there still remained of the debt an unsatisfied balance of $2,557.75, for which the company was legally entitled to judgment.

So far, it cannot be said to have done any thing unusual—that is, as far as we know—but the cream of the story is in the sequel. Although the company had contrived to obtain the property for the price of $38,500, *only a few days afterward* they sold it for $47,500, making a *clear profit* of $9,000 on the transaction! Instances have been known of mortgage creditors in such cases refunding to the debtor the surplus over their actual dues. This, however, would be too much to expect from the *Equitable Assurance* Company. But what was its course? Should we not admire the appropriateness of the title? Having quietly pocketed its $9,000 profit, it coolly applies to the court for leave to *sue* the executrix and executor of Mr. Stevens *for the* $2,557.75 *not realized on the original sale under foreclosure.* No wonder that Chief-Justice Daly, while granting the application as a strict legal right, remarked that he did so most unwillingly.*

If all companies holding mortgages were in the habit of using them as instruments of oppression or extortion, there would be little use in

* Some are ill-natured enough to say that it is in order to divert public attention from performances of this kind, that the Equitable Assurance has its fine buildings described and praised in one paper (with lists of tenants, accounts of great libraries, etc., etc.), and has the same description, with lists, etc., copied into as many other widely-circulated papers as can be induced to foist that sort of "news" on their readers.

Be this as it may, we well remember that the same tactics were used when the manager of the Equitable was also the manager of a concern styled the California Petroleum Company, which had also enormous "assets," but whose assets did not save it from a premature and rather dishonorable grave. Perhaps the Equitable editorial or correspondence column in the pious, disinterested *Independent*, will explain these little matters, and show, *ex more*, that they are just the things for the widow and the orphan!

pointing out particular instances of that sort of work. But we know that such is not the case; we are in possession of the most satisfactory evidence that the Manhattan and the New England Mutual, the Mutual Benefit, and the Continental, treat those on whose property they hold mortgages as considerately and liberally as they treat their policy-holders.

Since writing the above we have been reminded of another New York company whose conduct in this matter is highly creditable and exemplary; namely, the Universal Life. An incident which has recently come to our knowledge will illustrate this: One, on whose property this company holds a mortgage for $10,000, writes to the secretary to request the privilege of paying the amount in instalments of $1,000. That gentleman replies promptly and politely that, wishing to be as accommodating as possible, the company accepts his proposition, and will receive the $1,000 in fifteen days from the date of the application. When the appointed day arrived the necessary official formalities had not been completed; but that the applicant lost nothing by this will sufficiently appear from the following letter:

"NEW YORK, March 12, 1875.

"DEAR SIR: We think it proper to say that, inasmuch as you have been ready since the 23d of February last to pay the sum of $1,000 on account of the mortgage held by this company on property No. ——, to stop interest from that date on said sum. Very respectfully,

"JNO. H. BEWLEY, V. P."

Eight days later the company was prepared; the fact was communicated, and the $1,000 paid. We think that a company which behaves in this manner deserves to succeed, and is morally entitled to public patronage.

The annual statement of the Equitable shows that it has done a pretty good business in the above line. It claims to own, at present, real estate in New York and Boston, and purchased under foreclosure, of the value of $3,931,451. This, of course, does not include such trifling items of profit as the $47,500 for which it sold foreclosed property that cost it only $38,500, or the $2,557.75 for which it proposes to sue Mr. Stevens's estate in addition thereto. These are side-profits—perquisites. We observe, moreover, that while the premiums represented as received by the company amount to $8,227,299.40, the *claims* which it returns as arising from deaths and matured endowments do not exceed $1,948,-362.36, less than one-fourth of its income from premiums. Verily the practice of resisting the payment of policies when they fall due, appears to have proved profitable.

This company, however, cannot claim to have attained the perfection of ingenuity in defending claims or policies unless it establish its identity with a certain insurance company which is reported to have been lately sued on a policy issued in Scranton, Pennsylvania. It is stated

that the individual insured had received warning, at a spiritual *séance*, that he would die on a certain day. In anticipation of this event, he prudently insured his life, and—*mirabile dictu!*—died on the day appointed. Of course, the spiritual circle did not lose the opportunity of proclaiming the testimony thus borne to the truth of their pretensions, and the story reaching the ears of the company, it refused payment of the policy, on the ground that the insured had committed *moral suicide!* What the courts thought of this defence we have not yet been informed.

While on the subject of defences to claims, we cannot refrain from noticing one recently set up by the Globe Mutual Life, in the suit of Maria Inman and children, in the U. S. Circuit Court at Louisville, Kentucky. The policy was for $10,000, issued July 3, 1871. The first two annual premiums were paid. For the third, a note at 30 days was given, July 3, 1873, and paid August 4, 1873. One month later—viz.: September 13, 1873—the insured, Inman, died, and it happened that on the same day the money, which had been received a month previously, was remitted by the agent to the company. The latter refused payment, on the ground that the policy provided that agents should not have authority to receive any thing but money on the annual premiums, and on the further ground that the note being dated July 3, was due August 2, and that a payment on August 4 was not a good payment—although the agent had been furnished by the company with blank notes for the very purpose, and the money due on the note had been received and pocketed by the company!

We were glad to see that Judge Ballard charged the jury that, notwithstanding the policy, the course of the company was equivalent to adopting the act of the agent in receiving the note, and that the note itself, being an inland bill of exchange, did not fall due until August 5th. But what can we think of a company which would deliberately seek to evade payment by a quibble like this? when it had actually accepted the money, the payment of which it pretended was irregular.

The New York Life does not seem to have driven quite so thriving a trade as the Equitable in the matter of resisting claims. But it returns $16,828,955.14 invested in bonds and mortgages "secured by real estate valued at more than double the amount loaned." We all know that "figures cannot lie." Nevertheless, print occasionally may, and does. We should like to ascertain from the company the true history of certain long rows of houses in the upper part of the city, on which it holds mortgages of $6,000 each, not one of which has realized double, or even half as much again as the amount loaned on it, and on most of which, second and third mortgagees, who have loaned their money on the faith of this company's professions, have come off badly bitten.

The John Hancock Mutual, whose liabilities came last year within $29,268 of its gross assets, as reported, and which, nevertheless,

paid out $28,010 in dividends, and in its report made a mistake of $80,000 on the wrong side of its asset account (which mistake ran on for six years undiscovered) has finally concluded not to give up the ghost. It came very near so doing, however, and it is said that a number of enterprising New York and Hartford companies hovered round the supposed moribund, and employed agents of their own among the policy-holders to induce them to transfer policies and assets, or at least to re-insure them. It is suggested that even the Chamber of Life Insurance, which is said to have a most affectionate appetite for companies which show symptoms of decline, manifested much more disposition to sympathize with the disease than with the patient. But the latter has thus far persisted in living, and the crowd of wreckers, vultures, or heirs expectant—by whichever name they prefer to be called—are, for the time, disappointed of their anticipated spoils. They need not despair, however. Years ago, and repeatedly since, we predicted the untimely end of the concern referred to; and we are sure it cannot be far distant now.

How far the principles of amalgamation and re-insurance are made an engine of fraud, let their own voices tell us. We quote from a speech, delivered by Mr. Clark at a recent meeting of the John Hancock Life:

"During the last four years, the policy-holders of 30 life insurance companies, authorized to do business in Massachusetts, have been made the victims of amalgamation. There were in number of these policy-holders, nearly 87,000, and there was insured upon their lives more than $209,000,000. * * On the $209,000,000 of insurance, the computed premium reserve was $17,550,000 which was the security which had accumulated from the money of the policy-holders, and was held for the payment of their insurances at maturity. * * * * *I speak from my own knowledge and observation, when I say, that of this amount not less than* $12,000,000 (?) *have been forfeited to the use and emolument of the amalgamators themselves, and their paid officers.*"

Hints are dropped that the wreckers are now about to try their hands on a certain Hartford Company. In this, it seems, as well as in the John Hancock case, there is something rotten. One thing is certain, that, whatever may be the principles of wreckers, they do not set about their trade unless they see some distinct indications, or, at least, probabilities of a wreck. Policy-holders would do well to mark the signs of the times. The Chamber of Life Insurance is said, whether justly or not, to be mainly responsible for this new gang of wreckers; acting for the benefit of certain enterprising companies, are only too ready to play the part of *prowling assignees* for all moribund companies.

The investigations still proceeding at New Haven into the affairs of the American National Life and Trust, promise some curious revelations as to the manner in which a certain class of life companies make out their reports. For instance, the guarantee capital of $100,000, which was sworn to be paid up in cash, was really paid by crediting the subscribers with $25,000 previous dividends, *to which they were not entitled*,

and taking from them securities for the balance, under an *express contract* that the same should be returned to their owners at the expiration of three years, *in any event!*

Again, the land and building belonging to the Company were valued in their sworn statement at $350,000. The books, unfortunately, showed an expenditure of only $258,000. To make up the difference, the witnesses on the investigation added, or claimed to add, the following items: "Loss of interest in construction of building, $21,618.22; builders' risk and insurance, paid *while we went without, and made a charge as we assumed it*, $28,800; one ground rent, $2,000; balance of architectural drawings and services, $8,982.65; expenditures which came in after that, $15,000; contractor's risk, *we being ourselves contractors, estimated that a contractor would charge on a special outlay* of $258,733, and that would be $25,000."

In addition to these, there were various peculiar figurings as to rent paid by the company to itself, and similar items which it claimed raised the actual value of the building and land to $485,631.29. But the richest feature in the story was the remark of Mr. Noyes, the principal witness, and the moving genius of this remarkable company: "*By G——! if it isn't true, it is the way life insurance assets and liabilities are calculated, anyhow!*"

If this be the way that certain life companies calculate their returns, their flaming reports are not surprising.

We now turn, as usual, to the bright side of the picture, only making a brief comparison here and there, somewhat after the manner of the spectroscope which so often presents the sombre, black lines side by side with the pure white. The first of the statements in which we have always had confidence, that happens to present itself to us, is that of the Manhattan, which shows the following results for the past, as compared with the previous year:

"*Increase* of Assets in 1874	$700,000
" " Income "	10,000
" " Policies "	32
Total losses "	85,000."

But let us see what is the character of the Manhattan's assets. Three kinds will be sufficient as specimens·

"Bonds and Mortgages, and interest accrued on same	$5,458,467 37
Loans on Policies in force	2,279,736 08
United States and New York State Stocks	708,356 00."

These are characteristic of the Manhattan. Then its total income for 1874 amounted to nearly two and a half millions ($2,405,698.73). This brings its assets up to ten millions, affording it an undivided surplus of nearly two millions ($1,837,677.17). It is not the number or extent of the figures that we regard as a criterion, however, but the good

faith of those who give them. Had the Manhattan been fond of law-suits, and fond of using the multiplication table in its statements, like some of its neighbors, it might long since have counted its assets by tens of millions. But would it have been any thing the better as a life company for this? Would it not have been the reverse, just in proportion to its law-suits and its multiplication?

The same remarks apply, in their best sense, with equal force, to the New England Mutual. It is now a dozen years ago since we spoke of it as a credit to New England. More than once we have expressed the opinion not only that it was worth all the other life companies of Massachusetts, but that it would one day be the only Massachusetts company in which the public could repose implicit faith. May we not say this to-day more emphatically than ever? Nay, should we not be fully justified, from all appearances, at this moment, in saying that the New England is becoming, not rapidly, but surely, *the* great company of New England? If any deny this, let them indulge in some researches into the condition and general *modus operandi* of those Hartford companies which make most display of their "assets."

But it is not for the figures it shows in its statements or elsewhere that the New England is entitled to public confidence, but for the substantial work it has done and is doing for its policy-holders. Yet its money pile is very large, except when compared with the piles of those who have as strong an aptitude for multiplication as they have for law-suits. In illustration of this, we present the company's net assets at the close of the past year, as duly attested, viz.: $13,114,416.98. During the past year its excess of receipts over payments amounted to nearly a million and a half ($1,414,415.89). But perhaps the most significant results of all are the following:

"Accumulation	$12,540,000
Distribution of Surplus in 31 years	6,000,000
Losses and Endowment Claims paid in 31 years	9,000,000."

The value of these figures is that they embrace no mythical elements. Our sincere estimate of them is, that they are as reliable as the figures used in balancing the bank-book of any of our first-class banking institutions—that of the National Park Bank, for instance. A book-keeper in the latter may possibly make a mistake once in a long time; but, if so, some other book-keeper is sure to discover the mistake, so that the depositor has nothing to fear. Thus the depositor is safe, in any event; and just as safe is the policy-holder of a company like the New England Mutual, the Manhattan Life, etc.

We are here reminded of the old Knickerbocker Life, which is now, nominally, managed by its third president. Mr. Nichols, like Mr. Lyman, is an accomplished and skilful underwriter, but the former is, as the latter was, oppressed by directors, who are neither accomplished nor skilful, but greedy, ignorant, and somewhat deficient in moral princi-

ple. We are not surprised, therefore, that some of the "assets" in the last annual statement of the company seem rather hypothetical. Perhaps it is our lack of perception that is at fault, but let the following items tell for themselves:

"*Unpaid* and *Deferred* semi-annual and quarterly premiums. $646,814 37
Commuted commissions. 202,825 96
Due from agents..... 3,915 56
Profit on investments..... 37,896 25
Furniture, and all other Assets in possession... ..... 25,833 79."

All these may be worth the amounts set opposite to them, but we think there are not many, even of the most credulous, who would be willing to take any of the items at one-tenth its valuation by the directors. The "*furniture and all other assets*," may be worth the figure placed opposite to them, but we fear that, when the auctioneer comes to examine them, he will have to extract the square root of that sum, or perform some kindred operation! Be this as it may, no one can pretend that the Knickerbocker is fond of appearing before the courts if it can at all avoid doing so consistently with the theory of clinging to the last to whatever it has in its crook. A corporation, like an individual, if placed once or twice on trial for its life, and has had but a narrow escape each time from being forced to the regions of Pluto, is apt to be more or less disgusted with trials. The directors ought to be thankful to Mr. Nichols for having saved them at least once. But now, that they begin to treat him as they did Mr. Lyman, and stuff their annual statement—pretty much as Bridget stuffs her chignon, cramming tow and chaff instead of hair into all save the external covering—we fear the fatal termination is not far distant, except Mr. Nichols is allowed to manage the company in his own intelligent, skilful way.

Death, in the usual course of nature, deprived the N. Y. Continental Life of an excellent president. It would have been in vain that his successor has proved his equal in the best qualities of an underwriter, had Mr. Frost the same sort of directors to deal with that Mr. Nichols has. But, fortunately for the former, and for the policy-holders of his company, he has to deal with a different class of men. Accordingly, there is no suspicious stuffing or wadding in the annual statement of the Continental Life. The story it has to tell is straightforward, and based upon substantial facts. Thus we find that its income for the past year was nearly three millions ($2,820,313.97). Its assets amount now to over six millions. What the character of its assets is, a few items will show:

"United States bonds..... 585,884 37
Bonds and mortgages .....1,352,925 00."

The Continental, while it might be the daughter of the Knickerbocker, so far as years are concerned, is not obliged to set any value on its furniture to swell its assets. Still less has it to use tow or chaff and call it some fancy name. Yet its statement closes thus:

"Surplus.....$711,982 01."

For so young a company—a company which, although it has one of the best printers in New York, or elsewhere, among its officers,* has no undue fondness for typographical display—it must be admitted that this is a good record.

The United States Life is suffering severely from some malady said to be brought on by the hard times. Its case seems not unlike that of

* M. B. Wynkoop, Vice President.

the Knickerbocker Life, which some call "palsy of the entrails," superinduced by "directorial" over-stuffing. Be this as it may, there is a strong family resemblance between the "assets" of the two companies. Thus, for example, if those which the United States Life calls, "cash in bank and in trust company," "premiums *in course of collection*," "*deferred* semi-annual and quarterly premiums, etc.," were deducted from the total there would not be much left. To make something out of nothing, is a difficult operation, but everybody knows that Mr. De Witt is very smart, and particularly "quick at figures." The remedy we would suggest is, swallow up some other company, or be swallowed up by some one whose stomach is strong enough for the operation. Try the New Jersey Mutual, which must also swallow, or be swallowed very soon.

No company has more substantial assets than the American Life, of Philadelphia; thus, for example, there is nothing ghost-like in the following:

"Value of real estate and ground rents owned by the Company (less the amount of encumbrances thereon).....	$238,899 99
Loans on bond and mortgage (duly recorded and being first liens).....	2,250,699 59."

The total assets of that judiciously-managed company is over four and a half millions, which affords a surplus for policy-holders and stockholders combined of over a million.

Per contra, the Penn Mutual Life depends largely for its "assets" on "scrip dividends," "*furniture* at home office and in agencies," "deferred payments, etc." The manager of the Provident Trust and Life, of the same city, is just now, and has been for some time, making professional researches in Europe. There is no fear of this company, as long as Mr. Shipley is at its head. Apart from the skill, tact, and foresight of its president, the Provident has the advantage of peculiar features which have made its Quaker namesake of England a veritable power in the land.

We should still have faith in the Charter Oak if its entire management were left in the hands of its president. We have pointed out more than once what would be the consequences of interfering with the intelligent, judicious, and honorable management of this gentleman. We have shown that while he was untrammelled the company was strong, prosperous, and popular; we have also shown that in proportion as another person was allowed to interfere, all this was reversed. But far from exulting, now that our predictions have been fully verified, we sincerely regret it; although we have still confidence in the vivifying and conservative abilities of Mr. Walkley.

For many years the Ætna Life was one of the most judiciously-managed companies in America. In other words, Mr. Enders was capital as secretary of the Ætna; but as president of the Ætna he seems to have cast aside all the energy, enterprise, and generally progressive spirit which had rendered him almost a prodigy. We do not, however, agree with those who represent his company (we call it his, for it was he who built it) as in a declining condition. We still have faith in the pristine virtues of Mr. Enders as a life underwriter.

If we speak last in our notes on life companies of the Mutual Benefit, of Newark, it is not for any lack either of confidence or esteem. We believe now, as we have for many years, that no company is safer or more faithful to its trust. There is no underwriter whose signature to a policy would inspire us with more confidence than that of the veteran

president of the Mutual Benefit. As to its prosperity, suffice it to say that its assets are now over thirty million dollars—after having paid claims by death in 1874 to the amount of nearly two millions ($1,921,-839,051). That its assets are of the substantial, not of the ghostly style, may be inferred from a specimen or two:

"Real Estate	$170,401 98
United States Securities	1,405,500 00
State, City and County Bonds	8,097,312 58
Bonds and Mortgages	12,415,657 75."

The company has been worthily represented in this city for many years—as worthily as the New England Mutual, and higher praise than this can not be bestowed on the agent of any company whatever.

The returns of the Fire Companies for 1874 do not, as a rule, show *quite* such a disproportion of receipts to expenditures as appeared in their returns for 1873, but there is enough still to invite comment. Thus, for example, it appears that the expenditures of the Arctic exceeded its income by the moderate sum of $15,863.76—not quite such a vast excess as that of last year. So, of course, it declared the usual semi-annual dividend! It may occur to some people who are not up to the present advanced lights in insurance, that had the Arctic refrained from paying out $20,314, in dividends, and had it reduced its outlay in the way of salaries to something less than its present figure of $16,950.04, its receipts might possibly have exceeded its expenditures. The Commerce Fire, in like manner, by paying out dividends to the amount of $20,000, and salaries and other fees to employees to the amount of $13,975—mark the discreet vagueness of the term—ran its expenditures up to $94,909.11, while its income did not exceed $93,126.56. The Knickerbocker Fire, during the same period, paid out $56,000 in dividends, and $20,150.76 in salaries, etc. No wonder that, although its payments for losses did not exceed $12,225.61, its entire expenditures swelled up to $115,133.44 or $23,007.88 over and above its income for the same year!

We might multiply these instances *ad infinitum*, but it is time to pass to another more important feature in the present year's reports; namely, the peculiar way in which assets are manufactured with reference to the surplus, which is returned above the liabilities and paid-up capital. For instance, the Ætna, which, by the way, is the successor, and has for its president the receiver, of the defunct Ætna, whose liabilities have swelled from $631,551.77 to $638,280.57, while its assets have diminished from $31,501.53 to $26,166.92—the investment in Washington Fire stock included—this new Ætna returns a surplus of $52,348.31. Not an enormous surplus in the first instance, but how is it obtained? Why, the Ætna professes to have $32,750 loaned on stock collaterals, $23,996.96 "premiums in course of collection," and $19,523.78 "cash in bank" and "cash in principal office;" three items which may or may not be correctly stated, and for which we have to take the company's word—and one of which is not pretended to be any more than an uncollected debt—and which, taken together, amount to $76,270.74, or nearly twenty-five thousand dollars more than the surplus. Of course, were this deducted from the gross assets, we should have, not a surplus, but a deficiency!

The item of "cash in bank" forms an important element in many of the Fire as well as Life Insurance returns; so uniformly, indeed, that we cannot refrain from thinking how convenient it must be for directors whose company does not show a sufficiently encouraging surplus, to deposit a round sum in bank in the name of the company, and quietly withdraw it when the report has once gone in! This conjecture may

seem uncharitable, but it is one which it is hard to resist when we remark the high proportion items of this nature bear in many returns to the amount of the surplus. The Commercial Fire has $21,000 "cash in bank," $16,860 in "loan on stock collaterals," mostly insurance, and $39,993.99 in "premiums in course of collection."

The fact to which we wish to call the attention of our readers is that all these items—these loans on stock collaterals of whose value we know nothing beyond the estimation set upon them by the company; the interest and these premiums, which it is not pretended have been collected, and, for aught we know, never will be collected, those large sums alleged to be in the company's office and the company's banks, and which may be withdrawn and distributed the moment the report has been verified and filed—are all included in the estimate of assets, and go to make up the gross amount from which the liabilities are to be deducted to obtain the surplus. Is it not plain in too many cases, that but for the insertion of these items the *surplus* would be materially reduced or even converted into a deficiency? And for what purpose is there always so much "cash in bank" or "cash in principal office" at the time of making up the annual reports? It is not pretended that the business of the companies requires them to have such large amounts continually on hand. It would be a most remarkable co-incidence if every company invariably had investments realizing about that time so as to fill their banks with unemployed cash. If the companies will furnish us their explanation of these curious returns, we shall be happy to receive it. Perhaps, however, they will prefer to answer in the words of the distinguished witness in the case of the American National Life and Trust Company above cited: "By G—! if it isn't true, it is the way life (and fire?) insurance assets and liabilities are calculated, anyhow."

Much remains to be said on the present condition of fire and marine companies. There is a deplorable amount of rottenness; but we shrink from the unpleasantness of extending our illustrations at this time. We prefer hoping that there will be an improvement as business revives. There are several companies that used to be honest, straightforward, and solid in the past. We trust they are so still, but lately we have made no researches in their cases. Thus, for example, when we last devoted attention to the Hanover Fire, it was prosperous and well-doing; nor do we know any one whom it has wronged. Similar remarks apply with equal force to the Citizens, the Farragut, the Commercial, the Continental, the Germania, etc. How these stand now we will not undertake to say, further than to remark that from our present data we have no reason to question the solvency or integrity of any of them.

Our readers know that, whatever our faults may be, national prejudice is not one of them. At no time have we been affected, in Europe or America, with what is vulgarly called "Anglophobia." Whatever opinions we may have had at different times, of the policy of the British Government, in its treatment of India, Ireland, etc., we have ever been in the habit of regarding English institutions as, in general, stable, solid, and reliable. We are well aware that several English insurance companies, fire and marine, as well as life, have proved as much "a delusion, a mockery, and a snare," as the similar corporations of any other country. But it would be absurd, as well as unfair, to judge all English companies by these. Everybody who has devoted any attention to the subject, is aware, that there are English companies in which the

French, the German, and the Italians have more faith, than they have in those of their own countries, respectively. It is well known, moreover, that, in general, they have good reason for their faith.

Foremost among the English companies, which are thus popular on the Continent, as well as in their island home, are the Liverpool and London and Globe Insurance Co. (Fire and Life), and the Queen Fire Insurance Co. of Liverpool and London; and may we not add that the same companies are popular in this country among the class who are capable of appreciating the tree, not from the soil in which it grows, but from the perennial fruit which it brings forth. The intelligent portion of our people do not allow their patriotism to prevent them from purchasing English carpets, English silks, or English broadcloths, English cutlery, etc., in preference to the similar American commodities, when they think the foreign articles will wear better, and are consequently cheaper in the end, than the home made. On precisely the same principle they purchase their policies of insurance, especially their fire policies; and who will say that they are wrong?

We have the best assurances, that neither of the two English companies mentioned was ever in a more prosperous or solid condition than it is now. Speaking of one, a London paper now before us says: "The statements of the Liverpool and London and Globe Company, for 1874, are calculated to give satisfaction to the most carping critic." The assets of the company at the first of the present month (March) were over twenty-six and a half millions of our money ($26,740,105.76,) —the assets of the New York branch alone amounting to nearly four millions ($3,771,532.84). How substantial the latter are may be seen from two or three of these items:

"Real Estate	$442,000 00
Loans on Bonds and Mortgages	1,237,400 00
United States 5-20 Bonds	707,618 75
United States 10-40 Bonds	212,056 25
United States Funded Debt	113,750 00."

These tell their own story—a story which needs no verification from England, or any place more distant than this city.

We have not the full statement of the Queen Fire before us, but we have its essence. The rest is vouched for by some of our leading merchants. The company has a capital of two millions sterling. Its American assets exceed a million ($1,145,729). Of this amount, $1,032,775 is deposited with the insurance department, and in the hands of trustees, each of the latter being the president of a prominent New York bank.

We wish we could say as much of certain New York, Hartford, and Philadelphia Fire companies, each of which proclaims far and wide its immense superiority to all rivals. But the Hon. Mr. Chapman, the present head of our Insurance Department, seems very tender, for some reason best known to himself, of those in the habit of making a loud noise about their "assets." This we intend to show in our next number. We cannot do so now, because it appears that one of the conditions of getting a copy of that functionary's Report in time, is to praise the "learned," "impartial," and "disinterested" author thereof. We have not the stomach to do this, and must, therefore, borrow, or wait until his serene highness condescends to favor us with an *exemplaire* of his great annual performance.

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